

# **AN ASSESSMENT OF CORPORATE ENTREPRENEURSHIP IN THE MANGANESE ALLOY INDUSTRY**

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Mini-dissertation submitted in partial fulfilment of the requirements for the degree  
Master in Business Administration at the North-West University, Potchefstroom  
Campus

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November 2008  
Potchefstroom

# ABSTRACT

Since the beginnings of venture creation the traditional role of the entrepreneur changed from only being the owner of a small business to include those individuals within a large company who has entrepreneurial skills and applies these to benefit the company. In an ever faster growing global economy the role of the entrepreneur within the large organization becomes more and more important to ensure the company keeps the competitive edge.

Corporate entrepreneurship is characterized by individuals who are innovative, creative, spend time and take risks. To support these entrepreneurial activities, the organization needs a climate and culture that is beneficial to these activities. An entrepreneurial orientation within an organisation is marked by dimensions such as innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy. The entrepreneurial behaviour among middle level managers is most critical to the effective implementation of corporate entrepreneurship. Middle managers are in a position to influence their subordinates' commitment to entrepreneurial activities once they have been initiated.

BHPBilliton is a world class company with a world class management strategy and systems to support the strategy. Part of the BHPBilliton Management strategy is "innovation", wanting to give all employees the opportunity to contribute to improvement by sharing their ideas with the company. This study was done at Metalloys, Meyerton, part of the Manganese Customer Sector Group, within BHPBilliton. Metalloys embarked on various programmes to create opportunities for employees to think in an entrepreneurial way. Middle managers at Metalloys play an important role in the innovation programs implemented at Metalloys. Against this background, this study seeks to confirm whether Metalloys, Meyerton has a true entrepreneurial climate and whether the middle management level involved with these initiatives share this perception.

## ACKNOWLEDGEMENTS / BEDANKINGS

My vader en moeder, Koos en Sus Fourie. My Dad en Johanna, dankie vir die wonderlikste ouers wat enige kind voor kan vra. Dankie vir alles wat julle opgeoffer het om vir my geleentheid te skep om sukses te kan behaal. Dankie vir al die gebede en onderskraging.

My gesin, Albie, Jo-Rina & Su-Nell. Dankie vir julle opofferings en geduld as ek moes leer en werk, selfs al was my geduld met tye maar min.

My skoonouers, Johan & Suzie Jordaan. Dankie vir die wonderlike ondersteuningsstelsel wat julle vir my is – net 'n oproep ver as my poppe 'n krisis het of iewers heen moet gaan en ek is nie beskikbaar nie.

My broers, Petrus en Christo. Dankie vir die baie oproepe, boodskappe en woorde van bemoediging – dit het so baie beteken.

My employer, BHP Billiton, Metalloys, Meyerton. Thank you for the opportunity to embark on this course and to do my research at Metalloys.

My studieleier, Stephan van der Merwe. Dankie vir die professionele en kundige manier waarop jy leiding gegee het deur die skripsie-proses. Jy is 'n waardige leermeester en dit was 'n wonderlike voorreg om soveel van jou te kon leer.

# TABLE OF CONTENTS

<b>ABSTRACT</b>	<b>i</b>
<b>ACKNOWLEDGEMENTS</b>	<b>ii</b>
<b>TABLE OF CONTENTS</b>	<b>iii</b>
<b>LIST OF FIGURES</b>	<b>vii</b>
<b>LIST OF TABLES</b>	<b>viii</b>
<b>CHAPTER 1: NATURE AND SCOPE OF THE STUDY</b>	<b>1</b>
1.1 INTRODUCTION	1
1.2 PROBLEM STATEMENT	2
1.3 OBJECTIVES OF THE STUDY	4
1.3.1 Primary Objective	4
1.3.2 Secondary objectives	5
1.4 SCOPE OF THE STUDY	6
1.4.1 Field of Study	6
1.4.2 The business under investigation	6
1.5 RESEARCH METHODOLOGY	6
1.5.1 Literature review	6
1.5.2 Empirical research	7
1.6 LIMITATIONS TO THE STUDY	9
1.7 LAYOUT OF THE STUDY	10
<b>CHAPTER 2: LITERATURE REVIEW ON CORPORATE ENTREPRENEURSHIP</b>	<b>13</b>
2.1 INTRODUCTION	13
2.2 CORPORATE ENTREPRENEURSHIP DEFINED	14
2.3 THE DETERMINANTS OF AN ENTREPRENEURIAL CLIMATE	15
2.3.1 Entrepreneurial climate defined	15
2.3.2 Dimensions or determinants of an entrepreneurial climate	16

2.4	ESTABLISHING CORPORATE ENTREPRENEURSHIP IN AN ORGANISATION	21
2.4.1	Development of Entrepreneurial skills	21
2.4.2	Corporate Entrepreneurship in an organisation	24
2.4.3	Measuring corporate entrepreneurship in an organisation	29
2.5	THE ROLE OF MIDDLE MANAGERS WITHIN THE ENTREPRENEURIAL ORGANISATION	31
2.6	SUMMARY	36
<b>CHAPTER 3: AN OVERVIEW OF METALLOYS WITHIN BHPBILLITON</b>		<b>38</b>
3.1	INTRODUCTION	38
3.2	A SHORT HISTORY ON BHP, BILLITON AND THE AMALGAMATED BHPBILLITON	40
3.3	SAMANCOR WITHIN THE MANGANESE CUSTOMER SECTOR GROUP OF BHPBILLITON	42
3.4	THE BHPBILLITON MANAGEMENT STRATEGY	43
3.5	STRATEGIC CHANGES AT METALLOYS	46
3.6	THE ZERO-TWO-ONE HUNDRED (0:2:100) STRATEGY	47
3.6.1	Zero (0)	48
3.6.2	Two (2)	48
3.6.3	One-hundred (100)	50
3.7	THE BUSINESS IMPROVEMENT (BI) PROCESS	50
3.8	CAUSAL FACTORS TO THIS STUDY	56
3.9	SUMMARY	57
<b>CHAPTER 4: RESULTS AND DISCUSSION OF EMPIRICAL RESEARCH</b>		<b>59</b>
4.1	INTRODUCTION	59
4.2	RESEARCH METHODOLOGY, DATA GATHERING AND STATISTICAL ANALYSIS	59
4.3	RESULTS AND DISCUSSION	61
4.3.1	Demographical information	61
4.3.1.1	Gender and age group	62
4.3.1.2	Highest academic qualification	62
4.3.1.3	Management level	62

4.3.1.4 Department	62
4.3.2 Self and superior assessment	64
4.3.2.1 Self assessment	64
4.3.2.2 Superior assessment	67
4.3.2.3 Comparison between self and superior assessment	69
4.3.3 Climate Survey	71
4.3.4 Reliability of the questionnaire measuring the entrepreneurial constructs	75
4.3.4 Reliability between the demographic variables and entrepreneurial constructs	76
4.4 SUMMARY	79
<b>CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS</b>	<b>80</b>
5.1 INTRODUCTION	80
5.2 CONCLUSIONS	80
5.2.1 Conclusions on demographic information	81
5.2.2 Conclusions on entrepreneurial characteristics	81
5.2.2.1 Self assessment	81
5.2.2.2 Superior assessment	82
5.2.2.3 Comparison between self and superior assessment	83
5.2.3 Conclusions on entrepreneurial climate	84
5.3 RECOMMENDATIONS AND ACTION PLAN	87
5.4 STUDY OBJECTIVES ACHIEVED	91
5.5 OPPORTUNITIES FOR FURTHER RESEARCH	93
5.6 SUMMARY	93
<b>BIBLIOGRAPHY</b>	<b>95</b>
<b>ANNEXURE A – ENTREPRENEURIAL CLIMATE QUESTIONNAIRE</b>	

## LIST OF FIGURES

Figure 2.1: Assets–Process-Performance framework	18
Figure 2.2: Guideline for structured innovation	27
Figure 2.3: The entrepreneurial health audit	29
Figure 3.1: Organisational structure for BHPBilliton up to Group level	39
Figure 3.2: Chronology of BHP	40
Figure 3.3: Chronology of Billiton	41
Figure 3.4: The Manganese Customer Sector Group of BHPBilliton	43
Figure 3.5: The interrelationships between the three elements of BI	51
Figure 3.6: An operational Value Driver Tree	52
Figure 3.7: The different stages through which an idea move	54
Figure 4.1: Respondents by qualifications	62
Figure 4.2: Management Level	63
Figure 4.3: Respondents by departments	63
Figure 4.4: Self-assessment on characteristics from highest to lowest	66
Figure 4.5: Superior-assessment on characteristics from highest to lowest	68
Figure 4.6 Comparison between self- and superior assessment	69
Figure 4.7: Entrepreneurial climate analysis – radar graph	73
Figure 4.8: Entrepreneurial climate analysis – clustered bar, ranked from highest to lowest score	73

## LIST OF TABLES

Table 2.1: Dimensions of Entrepreneurial Orientation	19
Table 4.1: Findings on self- assessment with regards to entrepreneurial characteristics	64
Table 4.2: Findings on superior- assessment with regards to entrepreneurial characteristics	67
Table 4.3: Statistical significance test values to indicate the relationship between the self and superior assessments	70
Table 4.4: Entrepreneurial climate survey results	72
Table 4.5: Cronbach alpha to indicate reliability and internal consistency of constructs	75
Table 4.6: The reliability between the constructs and the demographic variable gender	76
Table 4.7 The reliability between the constructs and the demographic variable age	77

# CHAPTER 1

## NATURE AND SCOPE OF THE STUDY

### 1.1 INTRODUCTION

According to Seshadri and Tripathy (2006: 17), the relentless pressures of competition stemming from globalization and technological changes today are increasingly bombarding organisations. Baucus, Norton, Baucus and Human (2008: 98) confirm this by stating that organisations face significant environmental complexity in today's global economy. Representative of these challenges, amongst others, are the criticality of flexibility and speed in responding to customers and markets, operational efficiency to lower costs and management of a diverse workforce. In response to these pressures many business "buzz words" like "reengineering", "restructuring", "downsizing", "de-layering", "rightsizing" and many more emerged to support efforts for survival and getting the competitive edge.

The past two decades also observed a growing interest for large organisations in corporate entrepreneurship as a tool to enhance the innovative abilities of their employees, and simultaneously, increase corporate sustainability (Antoncic & Hisrich, 2003: 7). Ireland, Kurakto and Morris (2006: 10) add that knowledge and the ideas flowing from it are a more important source of competitive advantage than the physical assets of a firm.

Uittenbogaard, Broens and Groen (2005: 258) highlight that the speed with which global high-technology markets evolve makes companies recognise that an effective innovation process is the best way to guarantee competitiveness. Thornberry (2002: 330) furthers that corporate entrepreneurship is quickly becoming a weapon of choice for larger companies and that it can be a powerful antidote to large company staleness, lack of innovation and stagnated top-line growth. Moreover, corporate entrepreneurship is becoming increasingly important for the competitiveness of organisations as they face dynamic competition unleashed by globalisations (Bhardwaj, Sushil & Momaya, 2007b: 47).

Hayton and Kelley (2006: 407) emphasise that corporate entrepreneurship, the discovery and pursuit of new opportunities through innovation and venturing, is an important source of competitive advantage.

Many companies act as internal venture capitalists, with formal innovation programmes. These programmes ensure that employees' innovative ideas could be reviewed. Examples of these programmes are Boeing's CREATE-programme and 3M's Genesis Grant programme (King, 2004: 2). The CREATE-programme focuses on commercialising military applications. Boeing also implemented the Chairman's Innovation Initiative with the purpose to encourage employees to develop new business ideas from company-developed technologies and processes (King, 2004: 2).

Kurakto and Goldsby (2004: 15) discussed the key role middle managers play in shaping the strategic agenda of their companies. According to Kurakto and Goldsby (2004: 15), middle managers influence the types and intensity of corporate entrepreneurial activities in their respective corporations. Kurakto, Ireland, Covin and Hornsby (2005: 699) confirm this with the remark that middle-level managers' entrepreneurial behaviour is linked to successful corporate entrepreneurship. Furthermore, Kurakto *et al.* and Hornsby (2005: 700) highlight that the reason for this is that middle-level managers reconcile top-level executives' perspectives with implementation issues surfacing at lower organisational levels. It is also because of the middle manager's unique position in the hierarchy of the organisation that middle managers' perspective on the entrepreneurial climate of the company is a good indication of the state of corporate entrepreneurship within the organisation.

## **1.2 PROBLEM STATEMENT**

Metalloys, Meyerton is one of two manganese alloy producers in Samancor Manganese and forms part of the Manganese Customer Sector Group within the global company BHPBilliton. The past five years have seen tremendous growth and development within BHPBilliton with the overriding commitment from management that the safety and health of employees and contractors come before production. This commitment, with the everyday economic pressures of competing on the global

market and staying abreast of cheaper and upcoming markets, put tremendous pressures on BHPBilliton. The South African economy adds its own set of unique challenges to Metalloys with the recent electricity crises and its ongoing implications, the fluctuation in the value of the rand and the increased focus from government on pollution prevention and preserving the environment.

BHPBilliton has formal structures and programmes in place to promote an entrepreneurial climate within the company and employees on different levels are motivated to participate in these activities. The Metalloys organisational structure includes a Research and Development department with the main focus on pursuing alternative technologies and processes to optimize output, lower the fixed cost per ton, generate energy saving solutions and reduce Metalloys' environmental footprint.

Metalloys was chosen within the BHPBilliton Manganese Customer Sector Group to pilot some of the formal programmes intended to enhance an entrepreneurial climate at different levels within the organisation. Should these pilot programmes be successful a formal roll out of the programmes to the rest of the Manganese Customer Sector Group will take place.

The most recent initiative is the implementation of a Business Improvement process (BI process) with idea generation at the heart of the process. With BI, various tools are utilised to analyse ideas for feasibility and to aid implementation of value adding ideas. Earlier implemented programmes running in succession with the Business Improvement process is the Road to Reliability or R2R initiative and Six Sigma. R2R focused specifically on the improvement of the maintenance process in order to increase availability of equipment. Six Sigma principles are used to facilitate and implement ideas related to more complex problems. Lean initiatives focus on removing "waste" from the process. Many success stories have been based on creation and fostering of this entrepreneurial climate and vital contributions have been made to the success and sustainability of the company.

Within Metalloys middle managers are the key players in initiating, implementing and managing these initiatives and programmes. Top management supports the programmes by making funds available to implement and maintain new ideas. The

organisational structure is also continuously adapted to accommodate and support new roles and responsibilities stemming from these programmes. The R2R initiative for example led to the appointment of Reliability Engineers, while the Business Improvement process facilitated the placement of a BI partner in each department.

Much emphasis is placed on successfully implementing and maintaining these programmes and therefore several measurement tools are used to track success or failure. Middle managers have certain critical performance indicators linked to the different programmes. Short term targets are set. Continuous feedback to top management, on success or possible problems preventing success, is discussed during formal weekly feedback sessions called RPM's (Results and Progress Management Meetings).

As middle managers are at the heart of implementing and maintaining these programmes, this study seeks to assess the perception of middle managers on the current entrepreneurial climate within Metalloys. The following research questions can be asked:

- Are the initiatives currently implemented fostering an entrepreneurial climate?
- Does the strategy followed by top management contribute to enhancing corporate entrepreneurship?
- Does this perceived entrepreneurial climate show the true elements of an entrepreneurial organisation or are these mere continual improvement initiatives?

### **1.3 OBJECTIVES OF THE STUDY**

#### **1.3.1 Primary objective**

The primary objective of this study is to assess corporate entrepreneurship within Metalloys, Meyerton with specific focus on the middle management level.

With various programmes and initiatives already implemented to aid entrepreneurial behaviour, the question is do middle managers perceive the company to have a true corporate entrepreneurial climate?

In conclusion, recommendations will be offered to foster and allow growth of the current entrepreneurial climate within Metalloys.

### **1.3.2 Secondary objectives**

In order to achieve the primary objective the following secondary objectives were formulated:

- Define corporate entrepreneurship and entrepreneurial climate.
- Obtain insight into the dynamics of corporate entrepreneurship, entrepreneurial climate and the role of middle management within these concepts by means of a literature review.
- Gain insight into the business environment of BHPBilliton as a company and Metalloys specifically as a part of the Manganese Customer Sector Group, within BHPBilliton.
- Assess the entrepreneurial attributes or characteristics of the middle and top management level at Metalloys.
- Access the perceived entrepreneurial climate within Metalloys by means of a questionnaire.
- Determine the relationship between the demographic variables and the constructs that measure entrepreneurial climate.
- Draw certain conclusions from the empirical study and offer practical recommendations to Metalloys to foster an entrepreneurial climate

## **1.4 SCOPE OF THE STUDY**

### **1.4.1 Field of study**

The field of this study is corporate entrepreneurship, entrepreneurial climate and the role of middle managers within an entrepreneurial organisation.

### **1.4.2 The business under investigation**

The business under investigation is Metalloys, Meyerton, in the Gauteng province of South Africa. Metalloys forms part of the Manganese Customer Sector Group within the global company BHPBilliton. Metalloys uses eight submerged arc furnaces to produce high and low carbon manganese alloys and an Oxygen Blown Converter to produce medium carbon manganese alloys used as a by-product by steel manufacturers worldwide to change the quality and characteristics of steel products.

An average number of five hundred and eighty persons are employed on a permanent basis, with about one thousand contractors on site on a continuous basis.

## **1.5 RESEARCH METHODOLOGY**

This research was conducted in two phases. A literature review was conducted on corporate entrepreneurship followed by an empirical study at Metalloys, Meyerton.

### **1.5.1 Literature review**

In order to conduct the literature review various publications were sourced. These include textbooks, previous research studies in this field, amongst others that by Oosthuizen (2006), Goosen, de Coning and Smit (2002), Sætre (2001) and Antoncic and Hisrich (2003 & 2006), as well as journals such as the *Journal of enterprising culture*, *Journal of change management*, *Journal of business venturing* and the *Journal of management development*.

The following topics were researched:

- Corporate entrepreneurship in general – several definitions and the increasing importance of corporate entrepreneurship as a means of survival in the global economy were explored
- The dimensions of corporate entrepreneurship
- Characteristics of an entrepreneurial climate
- The determinants of an entrepreneurial climate
- Establishing corporate entrepreneurship in an organisation, including different models and frameworks developed to enhance and foster corporate entrepreneurship
- The role played by middle managers in creating and fostering an entrepreneurial climate. The specific contributions that middle managers can make to enhance the entrepreneurial climate within an organization

### **1.5.2 Empirical research**

The empirical research will be done with the aid of a questionnaire by a study population identified for this purpose. Data will be gathered by the distribution and collection of hard copy questionnaires after which the data will be analysed.

- **Construction of the questionnaire**

An empirical study will be done by means of a questionnaire developed by Oosthuizen (2006). The questionnaire is specifically focused on measuring the perception of middle management on the entrepreneurial climate within the organisation. Oosthuizen (2006) identified thirteen constructs that should be evident in an organisation perceived to have an entrepreneurial climate. For each of the

constructs five items were identified to evaluate that specific construct. The questionnaire uses a four-point Likert scale and middle managers have to indicate their degree of agreement or disagreement (1= strongly disagree; 4 = strongly agree) with a specific question or statement.

In addition to measuring the entrepreneurial climate within the organisation the questionnaire also requires the middle manager as well as the superior to be evaluated on certain personal entrepreneurial characteristics. A final section is devoted to the gathering of particular demographical information from the individual correspondents.

- **The study population**

The target population for this study is middle managers within Metalloys, Meyerton. Because it is involved in manufacturing, Metalloys structurally consists of production, maintenance and services departments. Middle managers at the different operational departments either have an engineering role or supervise the different teams which are responsible for production and maintenance. This sample was selected based on the vital role middle managers play to implement and sustain certain initiatives contributing to the creation of an entrepreneurial climate and for reasons of being easily accessible and time spent on fieldwork that will be limited.

Middle managers were identified as all persons reporting to a head of department and the direct reports of persons reporting to a head of department. Excluded from this group are middle managers from services departments not directly involved with operational departments. These excluded middle managers are from the Human Resources and Finance Departments.

The current organogramme within Metalloys, updated by HSEC (Health, Safety, Environment and Community) Officials per department as part of an ISO 9001:2000 requirement, was used to identify the positions and individuals to be included in the target population. In total, ninety-six participants were identified. The participants are from seven different departments and have various roles either within production, maintenance or have a support function.

- **Data gathering**

Data was gathered by distributing hard copies of the questionnaire to individuals identified as being part of the study population. Within each department the HSEC (Health, Safety, Environmental and Community) person as the most central communication point in the department, assisted with the distribution and collection of the questionnaires within a particular department.

Preceding the distribution of the questionnaires, electronic mail messages were sent to individuals to explain the purpose of the study, to assure them of the confidentiality with which the information would be handled and to request their support with the completion of the questionnaire by a target date.

Follow-up on progress with completion of the questionnaires was done with individuals by means of verbal and electronic communication. A total of sixty one usable questionnaires were returned from the initial ninety-three distributed. The sixty one usable questionnaires were subjected to further statistical analysis.

- **Statistical analyses**

The data collected was statistically analysed, using Statistica (Statsoft, 2008) and SPSS (SPSS, 2005). Construct validity of the questionnaire was assessed by means of exploratory factor analysis and by calculating Cronbach alpha coefficients.

## **1.6 LIMITATIONS TO THE STUDY**

The study attempted to assess whether corporate entrepreneurship is practiced in the manganese alloy industry. Manganese alloy producers in South Africa are limited to three major companies, namely Samancor in Meyerton (Metalloys), Ashman in Cato Ridge, KwaZulu Natal, and Transalloys in Witbank, Gauteng. A few privately owned furnaces with a very low impact on the market are also operational. Only Samancor, Meyerton (Metalloys) was selected for this study and therefore that is a limitation to this study.

Furthermore the focus was placed on Metalloys' middle management level only. The sample can therefore not be considered to be representative of the manganese alloy industry in South Africa or within BHPBilliton.

This study provides some evidence of construct validity, but further research is needed before the instrument could be utilised to diagnose corporate entrepreneurship. Care should be exercised in the interpretation and utilization of the results, and the findings of the study should not be generalized.

## **1.7 LAYOUT OF THE STUDY**

### **Chapter 1 – Nature and scope of the study**

Chapter 1 provides the background to the study. As an introduction a few concepts on corporate entrepreneurship and the import role of corporate entrepreneurship in the global economy are touched upon. The problem statement highlights the perceived entrepreneurial climate at Metalloys, Meyerton. The need for the study is then outlined to determine whether middle managers at Metalloys perceive the organisation to have a true entrepreneurial climate.

From the problem statement primary and secondary objectives for the study are derived. Primarily an assessment of corporate entrepreneurship at Metalloys Meyerton will be done after which recommendations will be offered to foster and allow growth of the current entrepreneurial climate.

The scope of the study defines the field of study, names the business under investigation and discusses the research methodology followed. Research was done through a literature review and empirical research. The empirical research will be done by means of a questionnaire, completed by a predefined study population after which the gathered data will be statistically analysed.

The limitations of the study are discussed and the chapter layout for the study is also set.

## **Chapter 2 – Literature review on corporate entrepreneurship**

Chapter 2 covers a literature review of corporate entrepreneurship. The concept of corporate entrepreneurship is defined in detail and the dimensions of corporate entrepreneurship are explained. The determinants and characteristics of an entrepreneurial climate are explored. The focus is placed on the role of middle managers and the characteristics that are essential to be good corporate entrepreneurs, are examined. The study is concluded with ways to establish corporate entrepreneurship within an organisation.

## **Chapter 3 – An overview of Metalloys within BHPBilliton**

Chapter 3 starts with a discussion on the history of BHP and Billiton before their amalgamation and then a short discussion on the BHPBilliton history after amalgamation. The position of Metalloys as an asset of BHPBilliton within the Manganese Customer Sector Group is indicated by using an organisational chart.

The major part of this chapter will be devoted to an explanation of the Metalloys management strategy which includes a business improvement process and idea generation programme. The chapter is concluded with the identification of the casual factors for this study.

## **Chapter 4 – Empirical research**

Chapter 4 contains a comprehensive explanation of the research methodology that was followed to complete the empirical study. The data gathering process, responses and presentation of findings, are presented. A discussion on the statistical methods used to analyse data and findings after analyses is also included.

## **Chapter 5 – Conclusions and recommendations**

This final chapter draws conclusions from the findings after data analysis. Practical recommendations will be offered to Metalloys, Meyerton to enhance their corporate entrepreneurship initiatives. The objectives set for the study will be evaluated to

confirm whether they have been reached. Suggestions for further research will be made.

# CHAPTER 2

## LITERATURE REVIEW ON CORPORATE ENTREPRENEURSHIP

### 2.1 INTRODUCTION

The first use of the word entrepreneurship dates back to the early nineteenth century. Jean Baptiste Say used it to describe certain behaviour. Say said the entrepreneur "...is called upon to estimate, with tolerable accuracy the importance of a specific product, the probable amount of demand, and the means of production". Say also stated that the entrepreneur is the economic agent who combined others into a productive organism (Vosloo, 1994: 148).

With the industrial revolution and the development of big corporate companies the role of the entrepreneur within these structures became more and more evident (Vosloo: 151). Corporate business today is to a large extent totally dependable on the entrepreneurs within the organization to keep the competitive edge (Antoncic & Hisrich, 2003: 7). Ireland, Kurakto and Morris (2006: 10) add that in the twenty-first century, knowledge and the ideas flowing from it are a more important source of competitive advantage than the physical assets of a firm. Kurakto (2006: 3) added that the United States achieved its highest economic performance during the past ten years by fostering and promoting entrepreneurial activity within large firms.

According to Kearney, Hisrich and Roche (2007: 275) research to date in the literature has not provided a consensus on the nature of entrepreneurship. Kearney *et al.* highlight that very little research is available which attempts to establish a theoretical framework or model that illustrates the various components, including environmental and organisational characteristics that affect the corporate entrepreneurship process. Bhardwaj, Sushil & Momaya (2007a: 131) confirm the view of Kearney *et al.* when they state that although empirical research on corporate entrepreneurship is growing increasingly rich, there is a gap between theoretical and empirical knowledge regarding the effective conduct of corporate entrepreneurship.

## 2.2 CORPORATE ENTREPRENEURSHIP DEFINED

Every company requires new ideas to survive and grow profitably and, hence, it has to find ways to tap the entrepreneurial potential inherent in its employees (Seshadri & Tripathy, 2006: 17). Hisrich, Peters and Sheperd (2005) define entrepreneurship as: “the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychic, and social risks and receiving the resulting rewards and personal satisfaction and independence”. From this definition it is clear that the entrepreneur shows certain behaviour: creates, spends time and takes risk. This behaviour is commonly highlighted by Casson (2003: 21), Muhanna (2007: 95), Goosen *et al.* (2002: 41) and Luchsinger and Bagby (2001: 10). Kurakto (2006: 2) uses the terms vision, change and creation and then adds that it requires an application of energy and furthers that an essential ingredient include the willingness to take calculated risk.

Muhanna (2006: 63) remarks that it is understood that entrepreneurship includes any behaviour with high scores on the dimensions of innovation, pro-activeness and risk-taking. Corporate entrepreneurship, according to Hayton and Kelly (2006: 407), is a set of firm wide activities that centers on the discovery and pursuit of new opportunities through innovation, new business creation, or the introduction of new business models. Vosloo (1994: 147) discusses the ability to explore the environment and identify opportunities.

Vosloo (1994: 147) furthers that in the business world anyone performing these functions is an entrepreneur, whether as an independent business person or a dependent member of an existing firm. Ireland *et al.* (2006: 10) define corporate entrepreneurship as a process through which individuals in an established firm pursue entrepreneurial opportunities to innovate without regard to the level and nature of currently available resources. King (2004) prefers to use the term intrapreneur and defines the intrapreneur as a person within a large corporation who takes direct responsibility for turning an idea into a profitable, finished product through assertive risk taking and innovation. Du Preez (1992a: 86), who also prefers the term intrapreneur, defines the intrapreneur as a person who identifies

opportunities, reacts to them by creating new ideas, products and services within the existing business, and accepts the risks of managing them.

Uittenbogaard *et al.* (2005: 256) distinguish between business development and corporate entrepreneurship and define business development to involve the actual development of product-market combinations, in other words it involves the execution of the innovation process. Uittenbogaard *et al.* (2005: 256) define corporate entrepreneurship as the way the organisation is shaped around the innovation process in order to create, maintain or improve innovativeness and business development.

Lassen, Gertsen and Riis (2006: 360) explore almost the same distinction, but use the terms radical innovation and corporate entrepreneurship. According to Lassen *et al.*, radical innovation is applied to describe innovation that is highly revolutionary or discontinuous and represents a new paradigm that can generate new wealth whilst transforming or displacing some parts or all of an established market. Corporate entrepreneurship (Lassen *et al.*, 2006: 360) is considered “an entrepreneurial orientation, which permeates an organisation’s outlook and operations leading to a variety of outcome”.

## **2.3 THE DETERMINANTS OF AN ENTREPRENEURIAL CLIMATE**

### **2.3.1 Entrepreneurial climate defined**

Organisational culture, according to Coetsee (2004: 200), is the climate of an organization and is based on the shared values, norms, beliefs and traditions that have been established over time. Coetsee (2004) furthers that an organisation’s culture can be constructive, for example, when it aids and supports individuals and teams in behaving optimally. Timmons and Spinelli (2007: 540) believe that the climate of an organization is created both by the expectations people bring to the organisation and by the practices and attitudes of the key managers. It is stated that organisational climate can have a significant impact on performance.

Casson (1995: 79) makes a crucial link between entrepreneurship and business culture by stating that the quality of entrepreneurship is highly dependable on the quality of business culture. Casson (1995: 79) furthers that the different kinds of business cultures favour different kinds of industries because different industries require different types of entrepreneurial skill. In all industries, however, the most important aspect of business culture is the extent to which it promotes trust. Trust facilitates cooperation between entrepreneurs, which is just as important as competition in achieving efficiency.

Dess and Lumpkin (2005: 147) remark: "Firms that want to engage in successful corporate entrepreneurship need to have an entrepreneurial orientation" and continues that this represents the frame of mind and perspective about entrepreneurship that are reflected in the ongoing processes and corporate culture of a firm. On the negative side, Ireland *et al.* (2006: 11) confirm that in spite of its potential to create value by contributing to improved organisational performance, many established companies do not encourage entrepreneurial behaviour and often have structural impediments in place that stifle or prevent it from occurring.

Weeks (2003) compares the organization to a tree with the roots as the culture – they grow deep and hold everything in place. These include values and beliefs. The climate of the organization comprises those factors that affect the well-being of the tree and represent the behaviour, attitudes and feelings of the organization.

### **2.3.2 Dimensions or determinants of an entrepreneurial climate**

Weeks (2003) continues by describing the climatic factors or dimensions that influence organisational creativity or innovation as:

- Challenge – how challenged, emotionally involved and committed are employees to the work?
- Freedom – how free is the staff to decide how to do their job?

- Idea time – do employees have time to think things through before having to act?
- Dynamism – the eventfulness of life in the organisation,
- Idea support – are there resources to give new ideas a try?
- Trust and openness – do people feel safe speaking their minds and offering different points of view?
- Playfulness and humour – how relaxed is the workplace, is it okay to have fun?
- Conflicts – to what degree do people engage in interpersonal conflict or warfare?
- Debates – to what degree do people engage in lively debates about the ‘issues’?
- Risk taking – is it okay to fail?

Weeks (2003) further groups the climatic factors or dimensions into three areas:

- Resources – idea time, idea support and challenge.
- Motivation – trust and openness, playfulness and humour and conflicts.
- Exploration – risk-taking, debates about issues and freedom.

Bhardwaj *et al.* (2007a: 131) also explore the dimensions of corporate entrepreneurship and use a model to define corporate entrepreneurship. The model, (Bhardwaj *et al.*, 2007a: 132), uses three dimensions that are related to define corporate entrepreneurship.

**Figure 2.1: Assets–Process-Performance framework**



Source: Bhardwaj *et al.* (2007: 132)

According to figure 2, the first dimension of corporate entrepreneurship is competitive assets and includes management support and risk taking propensity or willingness of management to take risks and tolerate failure. The second dimension is collectively called competitive processes and includes intelligence generation and dissemination, work discretion, rewards and organizational flexible boundaries. The final dimension is competitive performance which involves the pursuit of creative or new solutions to challenges confronting the firm.

Dess and Lumpkin (2005: 147) agree that innovativeness, pro-activeness and risk taking are the most frequently used dimensions from both the strategy making process and the entrepreneurship literature. Dess and Lumpkin (2005: 147) also propose two additional dimensions, namely competitive aggressiveness and autonomy. The five dimensions identified by Dess and Lumpkin (2005:147 are:

- Innovativeness;
- Pro-activeness;
- Risk-taking;
- Competitive aggressiveness; and
- Autonomy.

Dess and Lumpkin (2005: 147) conclude that collectively these five dimensions permeate the decision-making styles and practices of the members of a firm. The factors often work together to enhance entrepreneurial performance. Dess and Lumpkin (2005: 148) define the five dimensions by using a table.

**Table 2.1: Dimensions of Entrepreneurial Orientation**

<u>Dimension</u>	<u>Definition</u>
Autonomy	Independent action by an individual or team aimed at bringing forth a business concept or vision and carrying it through to completion
Innovativeness	A willingness to introduce newness and novelty through experimentation and creative processes aimed at developing new products and services, as well as new processes
Pro-activeness	A forward-looking perspective characteristic of a marketplace leader that has the foresight to seize opportunities in anticipation of future demand.
Competitive aggressiveness	An intense effort to outperform industry rivals. It is characterized by a combative posture or an aggressive response aimed at improving position or overcoming a threat in a competitive marketplace
Risk-taking	Making decisions and taking action without certain knowledge of probable outcomes; some undertakings may also involve making substantial resources commitments in the process of venturing forward

Source: Dess and Lumpkin (2005: 148)

Thornberry (2002: 30) briefly refers to four broad typologies or categories of corporate entrepreneurship found in corporate entrepreneurship literature, namely:

- Corporate venturing – involves the starting of businesses within a business, usually emanating from a core competency or process.

- Intrapreneuring – an attempt to take the mindset and behaviours that external entrepreneurs use to create and build businesses, and bring these characteristics to bear inside an existing and usually large corporate setting.
- Organisational transformation – involves a new arrangement or combination of resources, and results in the creation of sustainable economic value.
- Industry rule-breaking – a subset of organisational transformation, but includes the competitive environment of the industry into something significantly different to what it was.

Antoncic and Hisrich (2001: 498) refer to previous views of intrapreneurship that can be classified into four dimensions. The four dimensions are:

- New business venturing – emphasis is on pursuit and entering new businesses within the existing organisation that are related to the firm's current products and markets.
- Innovativeness – emphasises creation of new products, services and technologies.
- Self-renewal – emphasises strategy re-formulation, re-organisation and organisational change
- Pro-activeness – reflects top management orientation in pursuing enhanced competitiveness and includes initiative, risk-taking, competitive aggressiveness and boldness.

In their later work Antoncic and Hisrich (2003: 9) define intrapreneurship not only to be the creation of new business ventures, but also to include other innovative activities and orientations such as development of new products, services, technologies, administrative techniques, strategies and competitive postures.

According to Antoncic and Hisrich (2003: 9), the characteristic dimensions for this definition of intrapreneurship are:

- New business venturing;
- Product/service innovation;
- Self-renewal;
- Risk-taking;
- Pro-activeness; and
- Competitive aggressiveness.

## **2.4 ESTABLISHING CORPORATE ENTREPRENEURSHIP IN AN ORGANISATION**

Dess and Lumpkin (2005: 147) highlight that corporate entrepreneurship is found in companies in which where the strategic leaders and the culture together generate a strong impetus to innovate, take risk and aggressively pursue new venture opportunities. Cooper and Mills (2005: 12) stress that a positive climate and culture for innovation and entrepreneurship, combined with effective cross-functional teams and backed by strong management support and empowerment are fundamental to success.

### **2.4.1 Development of entrepreneurial skills or characteristics**

Vosloo (1994: 155) states that it is essential to foster an enabling environment to encourage the development of entrepreneurship as well as to build up entrepreneurial capacity. Vosloo (1994: 155) suggests that a comprehensive development strategy be followed focusing on amongst others, combining vocational training with entrepreneurial development and providing entrepreneurship by

including instruction in basic business practice and entrepreneurial behaviour in the curricula of educational and training institutions.

Kurakto (2006: 10) confirms the fact that certain facets of entrepreneurship can be taught. Kurakto (2006:10) adds that entrepreneurship is a discipline and therefore it can be learned. Timmons (2003: 10) is of the opinion that you can not teach people to think entrepreneurially, but you can teach them entrepreneurial practices and strategies.

Thornberry (2002: 329) undertook a study to determine whether large companies, through management education and action learning projects could indeed turn managers into corporate entrepreneurs. Thornberry (2002) did field research within four large companies that had embarked on formalised corporate entrepreneurship management development programmes to determine whether these training programmes had brought a significant change in new business results. In conclusion Thornberry (2002: 341) admits that there were several successes and many failures with the following lessons learned from the training programmes:

- Pockets of entrepreneurial activity can develop and thrive, at least for a while, in cultures that are not inherently entrepreneurial.
- A lot of ordinary corporate citizens can learn to act as corporate entrepreneurs with the right education, training and support.
- Catalytic coaching and the business planning process were the two most important educational tools for the development of new business opportunities.
- Entrepreneurs can come from anywhere in the organisation. One of the biggest lessons learned was the inability to predict who could become a corporate entrepreneur. When experience, creativity tools, coaching, and a person's own confidence and desire collide with market knowledge, customer intimacy information, and technological changes, entrepreneurial opportunities are identified.

- Decouple ideation and opportunity identification from implementation. Some individuals really do have the ability to identify, develop and implement a new business venture from start to finish.
- A little difference can make a big difference. Not every manager needs to be an entrepreneur to help a company spawn significant new business opportunities.

Hayton and Kelly (2006: 407) argue that the competencies of individual employees, specific to the pursuit of corporate entrepreneurship, are fundamental to the ability of companies to nurture and sustain innovation and new venture creation. Hayton and Kelly (2006: 409) further state that employees seeking to promote corporate entrepreneurship need specific individual competencies in order to integrate existing and new knowledge and recognise, evaluate, and capture entrepreneurial opportunities. Hayton and Kelly (2006: 413) identified the four competencies specific to corporate entrepreneurship as:

- **Innovating** - the innovator role requires an ability to identify new market, organisational, or technological opportunities and combine new or existing resources in unique and creative ways.
- **Brokering** - the primary role of the broker is to access new sources of information and knowledge, transferring this knowledge and combining different sources, both existing and new.
- **Championing** - underlying championing competence are individual characteristics of emotional intelligence, transformational leadership skills, broad organisational experience, credibility and trustworthiness.
- **Sponsoring** - sponsors help entrepreneurs gain access to resources they need for their ventures, therefore competencies include deep technological and business knowledge, risk tolerance, persistence and passion, and transformational leadership skills.

Ireland *et al.* (2006: 29) teach that understanding and supporting a corporate entrepreneurship system should not be left to chance. Ireland *et al.* (2006: 29) suggest that firms should develop a programme with the purpose of helping all parties who will be affected by a corporate entrepreneurship system to understand the value of entrepreneurial behaviour. Ireland *et al.* (2006: 29) outlined the following elements to form part of a corporate entrepreneurship employee development programme:

- Introduction to entrepreneurship.
- Entrepreneurial breakthroughs.
- Creative thinking.
- Idea development process.
- Barriers, facilitators and triggers to entrepreneurial thinking.
- Venture planning: the intra-plan.

#### **2.4.2 Corporate entrepreneurship in an organisation**

Bhardwaj *et al.* (2007a: 134) defined the crucial elements impacting on corporate entrepreneurship to be:

- Management involvement;
- Top management support;
- Organisational support in terms of training and trusting individuals within the firm;
- Practices such as work discretion, innovation rewards and time flexibility; and

- Loose intra-organisational boundaries.

In an earlier study which focuses on the role of organisational flexibility in corporate entrepreneurship, Bhardwaj and Momaya (2006: 39) found the following to be important:

- An open and supportive internal environment in an organisation that allows employees to be entrepreneurial at all levels.
- Interdepartmental cooperation and coordination (teamwork).
- Management support in the form of recognition, guidance, aligning goals and giving rewards.
- Imparting training to people.
- Increasing the communication level between the management and the workers.
- Making people feel more responsible towards their work.

Seshadri and Tripathy (2006: 17) undertook research in India and determined that apart from the culture of innovation in the organisation the top management is responsible for creating, there are three other major components needed to instil corporate entrepreneurship, namely:

- Innovation activism - the role played by autonomous corporate entrepreneurs.
- Innovation as a capability – through which people in the organisation are trained for innovation.
- Innovation as a process - this ensures that ideas are progressively ramped up from imagination to experimentation, assessment, scale-up and then reality.

In a Norwegian study, Sætre (2001: 65) researched the creation of new ventures within existing organisations to determine what is needed for success. Sætre (2001: 65) identified the following factors that influence the successful creation of new ventures:

- Availability of funds – those organisations seeking to stimulate innovation outside the traditional Research and Development units, were allocating more funds in the earlier project stages, thus accelerating project development.
- Structural rigidity and cost management – many organisations have difficulty in stimulating the growth of new ventures because of structural rigidity and poor cost management.
- Lack of support - both financial and otherwise.

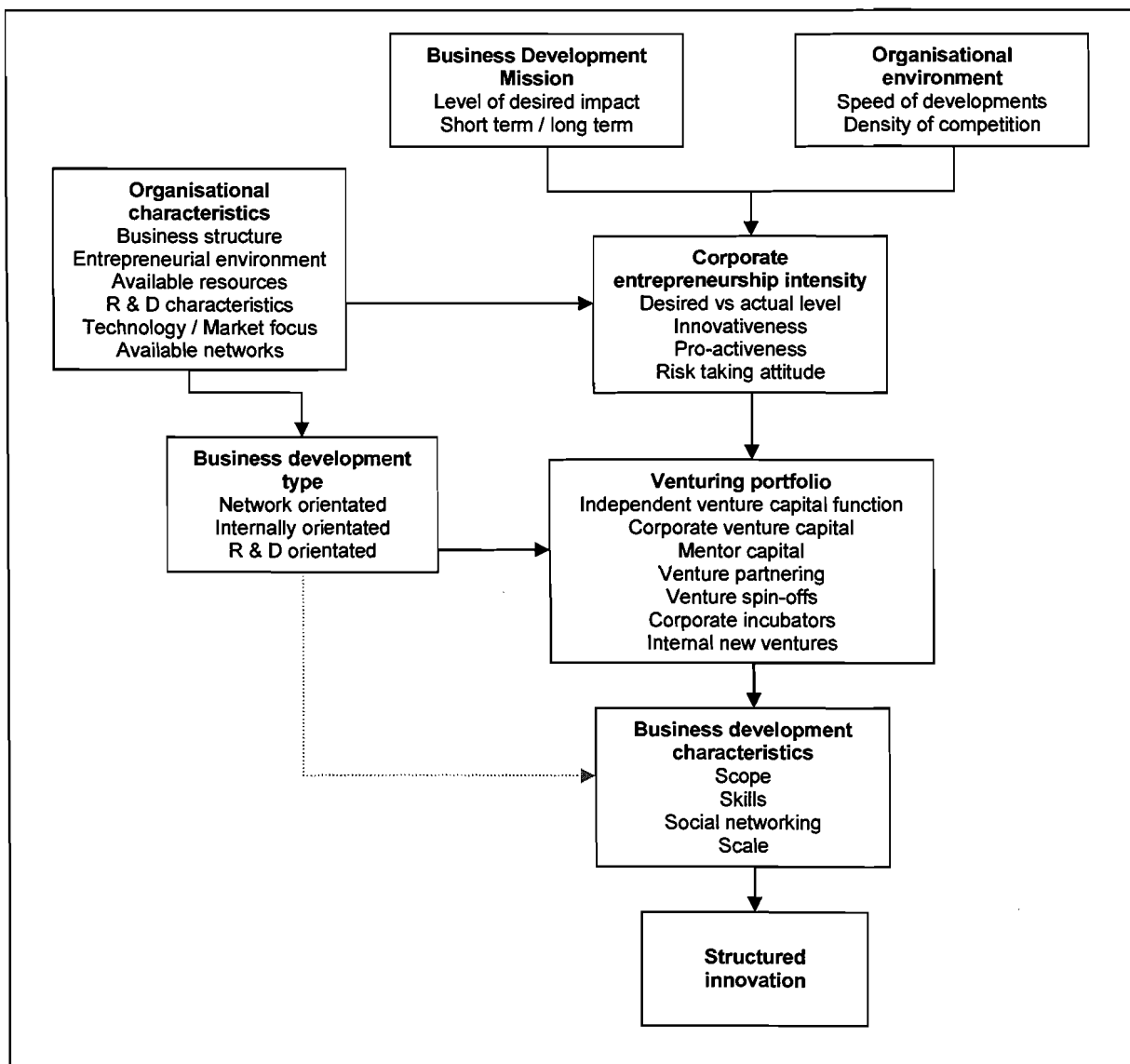
Uittenbogaard *et al.* (2005: 262) developed a guideline for the design of a corporate entrepreneurship function in medium sized technology based companies. Uittenbogaard *et al.* (2005: 263) conducted a literature study and analysed five different companies to determine factors for success and failure when developing a corporate entrepreneurship function. The success factors identified are as follows:

- The definition of explicit business development goals and a clear strategy.
- Creating alignment of individuals and enabling progress control and pre-emptive corrections.
- Periodical progress control decrease risk.
- Decentralisation of the decision process creates speed and flexibility.
- A strong reputation attracts possible partners and improves the idea generation process.

- Clearly identified and specified competencies and skills exclude the Human Resources Monitory policy as a bottleneck for ‘best possible results’.
- Partnerships with customers stimulate idea generation and ‘guarantee’ a market for newly developed products.

With this information available, Uittenbogaard *et al.* (2005: 263) constructed a guideline for structured innovation. Figure 2.2 gives a visual representation of the guideline.

**Figure 2.2:** Guideline for structured innovation



Source: Uittenbogaard *et al.* (2005: 264)

The **top centre of the guideline** is formed by the factor corporate entrepreneurship intensity which is influenced by the business development mission, the organisational environment and the organisational characteristics. With the information about the organisational characteristics, the most suitable business development type can be determined. The next step in the process is to determine an appropriate venturing portfolio. As a final step in the guideline, the composition of the venturing portfolio combined with the choice of business development type and the identified problem causes and success factors can be used to present recommendations regarding the characteristics that should be present in the business configuration.

Luchsinger and Bagby (2001: 12) describe organisations that foster intrapreneurship as characterized by:

- Practicing enlightened management principles.
- Adopting an entrepreneurial style that avoids bureaucratic barriers and fosters an innovative climate.
- Encouraging intrapreneurship and innovation among the workforce.

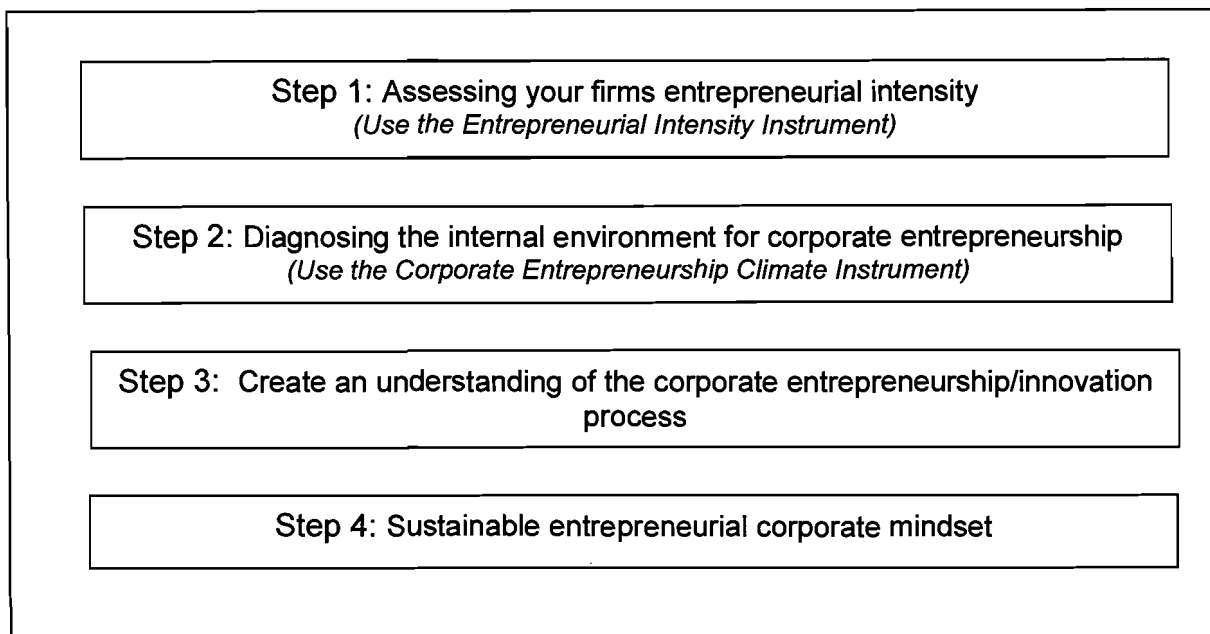
Luchsinger and Bagby (2001: 12) continue by listing intrapreneurial sponsors within the entrepreneurial organization:

- Focuses on results and teamwork.
- Rewards innovation and risk taking.
- Tolerates and learns from mistakes.
- Remains flexible and change-orientated.

### 2.4.3 Measuring corporate entrepreneurship in an organisation

Ireland *et al.* (2006: 21) developed an entrepreneurial health audit. The audit serves as a tool to diagnose and address the extent to which an organisation is capable of fostering sustainable entrepreneurial behaviour as the path to improved performance. Figure 2.3 outlines the steps in the audit process.

**Figure 2.3:** The entrepreneurial health audit.



Source: Ireland *et al.* (2006: 22)

Ireland *et al.* (2006: 22) stress that to assess the degree of entrepreneurship, of a firm, measures of innovativeness, risk-taking, and pro-activeness are needed. The authors use the entrepreneurial intensity instrument for this measurement. With this instrument Ireland *et al.* (2006: 22) use 12 items to measure the degree of entrepreneurship of a firm and then use the remaining items to measure the frequency of entrepreneurship. This instrument allows a firm to understand its entrepreneurial intensity at a point in time (Ireland *et al.*, 2006: 24).

Ireland *et al.* (2006: 24) then go a step further and use the Corporate Entrepreneurship Climate Instrument to understand why the firm has developed its current level of entrepreneurial intensity. The Corporate Entrepreneurial Climate Instrument is used specifically to assess, evaluate, and manage the internal work

environment in ways that support entrepreneurial behaviour and the use of a corporate entrepreneurship strategy (Ireland *et al.*, 2006: 24).

The authors developed their Corporate Entrepreneurship Climate Instrument around the five factors they consider to be the antecedents of corporate entrepreneurship. These antecedents are:

- Management support
- Work discretion/autonomy
- Reinforcement
- Time availability
- Organisational boundaries (Ireland *et al.*, 2006: 27)

The Corporate Entrepreneurial Climate Instrument consists of 78 Likert-style questions and can be used to develop a profile of a firm across the dimensions and internal climate variables (Ireland *et al.*, 2006: 28).

Oosthuizen (2006) conducted a literature review of several scholars (Kurakto, Hornsby, Naffziger & Montango, 1993; Pinchot & Pellman 1999; Turner 2002; Antoncic & Hisrich 2004; Cohen 2004; Kuratko, Ireland, Covin & Hornsby 2005; among others), and then identified thirteen themes or constructs that seem necessary for an entrepreneurial climate in organisations. Oosthuizen (2006) identified the constructs or themes to be:

- Visionary or entrepreneurial leadership
- Management support
- The presence of a champion or sponsors

- Tolerance for risks, mistakes and failure
- Innovation and creativity - new ideas encouraged
- Appropriate rewards and reinforcement
- Vision and strategic intent
- Discretionary time and work
- Empowered teams, multi-disciplined teamwork and diversity
- Resource availability and accessibility
- Continuous- and cross-functional learning
- Strong customer orientation
- A flat organisational structure with open communication and strong sense of belonging.

Oosthuizen (2006) identified five items per construct to evaluate middle management's perception on each construct. The measuring questionnaire used a four-point Likert scale and the managers have to indicate the degree of agreement or disagreement with its content.

## **2.5 THE ROLE OF MIDDLE MANAGERS WITHIN THE ENTREPRENEURIAL ORGANISATION**

Kurakto *et al.* (2005: 699) refer to the role of the middle-level managers and states that their entrepreneurial behaviour is linked to successful corporate entrepreneurship. Effective entrepreneurial behaviour by middle-level managers is a

necessary step to achieving various organisational goals (Kurakto *et al.*, 2005: 699). The authors further that the role of middle-level managers focus on effectively communicating information between the two internal managerial stakeholders (top-level managers and operating-level managers). To fulfil this role, middle-level managers interactively synthesize information, disseminate that information to both top- and operating-level managers and then as appropriate, champion projects that are intended to create newness (e.g. a product, service or business unit). In other words, once a commitment is made by all managerial parties to pursue a certain set of actions, such as those associated with corporate entrepreneurship, middle-level managers' communication responsibilities find them facilitating information flows that support project development and implementation efforts (Kurakto *et al.*, 2005: 699).

In conducting their research Kurakto *et al.* (2005: 699) suggested that there are five stable organizational antecedents of middle-level managers' entrepreneurial behaviour. These are:

- Management support – the willingness of top-level managers to facilitate and promote entrepreneurial behaviour, including the championing of innovative ideas and providing the resources people require to take entrepreneurial actions.
- Work discretion/autonomy - top-level managers' commitment to tolerate failure, provide decision-making latitude and freedom from excessive oversight, and to delegate authority and responsibility to middle-level managers.
- Rewards/reinforcement – developing and using systems that reward, based on performance, highlight significant achievements and encourage pursuit of challenging work.
- Time availability – evaluating workloads to ensure that individuals and groups have the time needed to pursue innovations and that their jobs are structured in ways that support efforts to achieve short and long term organisational goals.

- Organizational boundaries – precise explanations of outcomes expected from organizational work and development of mechanisms for evaluating, selecting and using innovations.

Kurakto *et al.* (2005: 705) further propose that middle-level managers' entrepreneurial behaviour is essentially focused on entrepreneurial opportunities and resources. The authors proceed with the question: "What do middle-level managers do with respect to resources and entrepreneurial opportunities that might be understood as essential types or dimensions of their entrepreneurial behaviour?" And the answer: "Middle-level managers endorse, refine, and shepherd entrepreneurial opportunities and identify, acquire, and deploy resources needed to pursue these opportunities. Kurakto *et al.* (2005:705) then discuss the true meaning of the terms used in the answer:

- Endorsement – this behaviour is typically in support of initiatives originating below the middle management level and aimed at influencing the outlook and perceptions of those above the middle management level. In an induced sense, middle-level managers endorse corporate entrepreneurship perspectives coming from top-level executives and "sell" their value-creating potential to the primary implementers namely first-level managers and their direct supports.
- Refinement – refinement behaviour characteristically involves moulding the entrepreneurial opportunity into one that makes sense for the organization, given the strategy, resources and political structure of the organization. First-level managers will often have little idea of what the entrepreneurial opportunity must "look like" in order to be viable as their attention will be more focused on the technical merit or market demand for the business concept. Top-level managers, by contrast, will often have a very definite sense of the type of entrepreneurial initiatives that fit their organizations well. It is characteristically the job of the middle-level managers to convert entrepreneurial opportunities into initiatives that best suit the organization.

- **Shepherding** – This function closely corresponds to the above-mentioned refinement function. However, where refinement is focused on the content or substance of the entrepreneurial opportunity, shepherding is focused on the organizational context within which the entrepreneurial opportunity evolves and gathers momentum.
- **Identification of resources** – While identifying the enabling resources is not the sole responsibility of any single level of management, middle-level managers tend to be positioned to know best which resources will be needed as entrepreneurial initiatives gain organizational traction. Thus, these managers tend to appreciate best what it will take, from a resource standpoint, to sustain the initiative on its growth path.
- **Acquisition of resources** – this behaviour requires a broad array of skills and points of leverage on the part of those leading the initiative. First-level managers tend to be relatively resource constrained in a formal budgeting sense due to the characteristically limited scope of their responsibilities and operations. By contrast top-level managers often have more discretionary resources at their disposal. Moreover, they are responsible for allocating resources in support of established operations as well as toward promising entrepreneurial activities. Middle-level managers operate between these two extremes.
- **Deployment of resources** – deployment can mean many things including, for example, how amassed resources are configured to enact the initiative how current resources are leveraged in support of the initiative the timing of the resource allocation process and the level and type of resources allocated in pursuit of the opportunity.

Heinonen and Toivonen (2007: 168) highlight that entrepreneurial behaviour, among middle level managers, is most critical to the effective implementation of corporate entrepreneurship. Heinonen and Toivonen (2007: 168) continue that middle managers are in a position to influence their subordinates' commitment to entrepreneurial activities once they have been initiated.

During the development of the entrepreneurial climate questionnaire, Oosthuizen (2006) included a section in the questionnaire in which middle managers had to evaluate first themselves and then their superiors, on certain characteristics considered to be necessary for entrepreneurial behaviour. The twenty characteristics used for the questionnaire are:

- Aspiration
- Initiative
- Energy
- Low support needs
- Thriving on ambiguity
- Perseverance
- Responsibility
- Problem solving
- Persuasiveness
- Self-discipline
- Belief in value of money
- Self-confidence

Kurakto and Goldsby (2004: 15) note that senior managers are isolated from day-to-day activities and middle managers play a crucial role in fostering communication about the mission, goals and priorities of a company. Kurakto and Goldsby (2004:

15) continue that middle managers interact with diverse employees, which would allow them to use formal and informal approaches to encourage innovation and calculated risk taking. The authors highlight the importance of middle managers in promoting autonomous or informal corporate entrepreneurial activities, because middle managers can provide an environment that allows employees to experiment with and explore the feasibility of innovative ideas. Middle managers can also use different approaches to make the organisational structure less resistant to change, thereby allowing corporate entrepreneurial activities to flourish.

Kurakto and Goldsby (2004: 15) conclude that middle managers play a key role in shaping their companies' strategic agenda by influencing the types and intensity of corporate entrepreneurial activities in their respective corporations.

## **2.6 SUMMARY**

Since the beginnings of venture creation the traditional role of the entrepreneur changed from solely being the owner of a small business to include those individuals within a large company who have entrepreneurial skills and apply these to benefit the company. In an ever faster growing global economy the role of the entrepreneur within the large organization becomes more and more important to ensure the company keeps the competitive edge.

Corporate entrepreneurship is characterized by individuals who are innovative, creative, spend time and take risks. To support these entrepreneurial activities, the organization needs a climate and culture that is conducive to these activities. The shared values, norms and beliefs of the company must be such that entrepreneurial activities can thrive. Training employees to be or act entrepreneurially can become a very important tool to enhance corporate entrepreneurship within the firm.

An entrepreneurial orientation within an organisation is marked by dimensions such as innovativeness, pro-activeness, risk-taking, competitive aggressiveness and autonomy. To measure the entrepreneurial climate within an organisation certain measuring instruments can be used for example the Corporate Entrepreneurship Questionnaire developed by Oosthuizen (2006).

The entrepreneurial behaviour among middle level managers is most critical to the effective implementation of corporate entrepreneurship. Middle managers are in a position to influence their subordinates' commitment to entrepreneurial activities once they have been initiated. The role of middle managers focuses on effectively communicating information between the two internal managerial stakeholders, the top-level managers and operating-level managers. To fulfil this role, middle-level managers interactively synthesize information, disseminate that information to both top- and operating-level managers and then as appropriate, champion projects.

# CHAPTER 3

## AN OVERVIEW OF METALLOYS WITHIN BHPBILLITON

### 3.1 INTRODUCTION

BHPBilliton is a leading diversified natural resources company with a portfolio of operations worldwide. The company has a diverse range of products, customers and markets, all with excellent growth opportunities. The product range include bauxite, aluminium, copper, silver, lead, zinc, molybdenum, uranium, gold, diamonds, titanium minerals, energy coal, iron ore, manganese ore, manganese metals and alloys, metallurgical coal, oil, gas and nickel products manufactured for the stainless steel market.

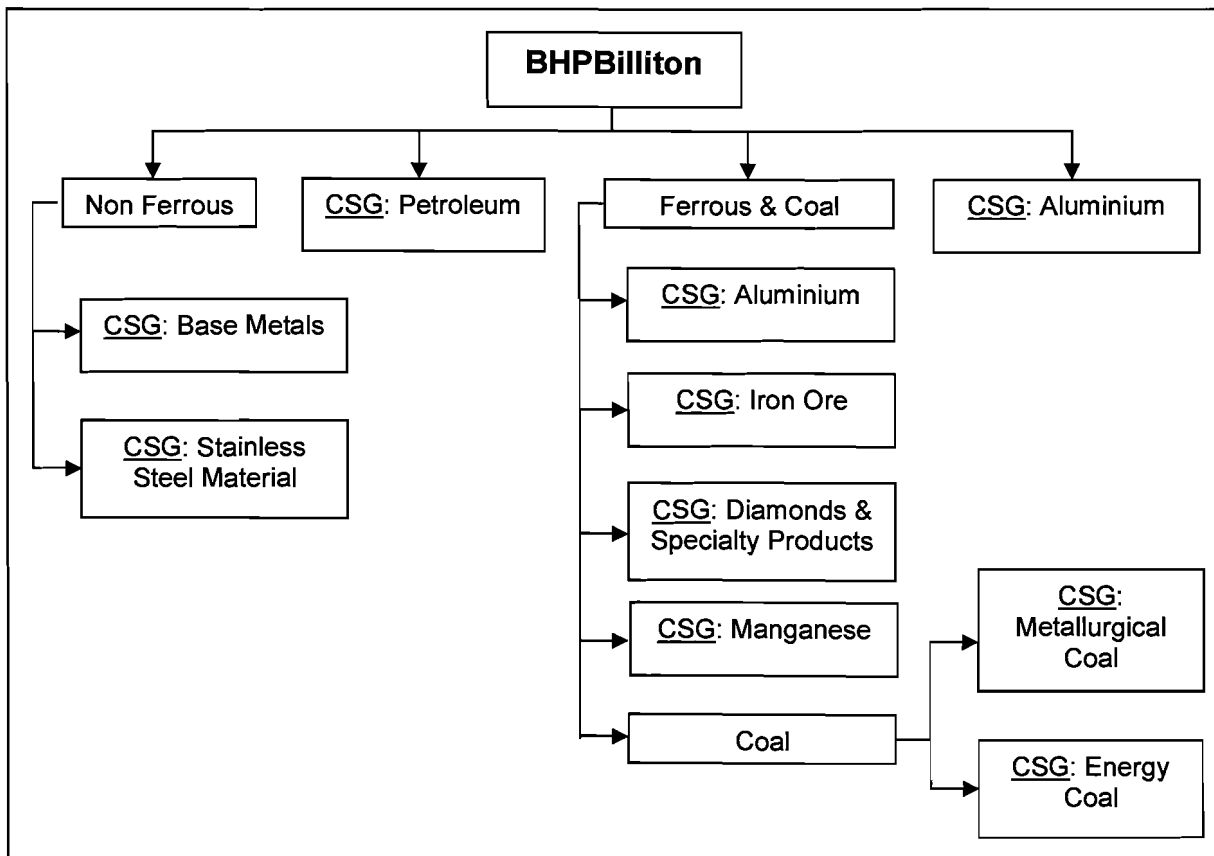
BHPBilliton has more than a 100 operations spread across the world, and these global locations act as a launching pad into international resources markets, via dual marketing hubs in The Hague and Singapore. BHPBilliton operates nine business units or Customer Sector Groups, aligned with the commodities which the company extracts and markets. The Customer Sector Groups are:

- Aluminium – Principal activities are the mining of bauxite, refining of bauxite into alumina and smelting of alumina into aluminium.
- Base Metals - Principal activities are the mining of copper, silver, lead, zinc molybdenum, uranium and gold.
- Diamonds and Specialty products – Principal activities are the mining of diamonds and titanium minerals.
- Energy coal – Principal activities are the mining and marketing of energy coal.
- Iron ore – Principal activities are the mining of iron ore from a number of mines.

- Manganese – Principal activities are the mining of manganese ore and production of manganese metal and alloys.
- Metallurgical coal – Principal activities are the mining of metallurgical coal in Australia.
- Petroleum – Principal activities are oil and gas exploration, production, development and marketing.
- Stainless steel materials – Principal activities are producing nickel products primarily for the stainless steel industry.

Figure 3.1 below, Organisational structure for BHPBilliton up to Customer Sector Group-level, indicates the reporting structure for each of the nine business units or Customer Sector Group's (CSG's).

**Figure 3.1:** Organisational structure for BHPBilliton up to Group level.



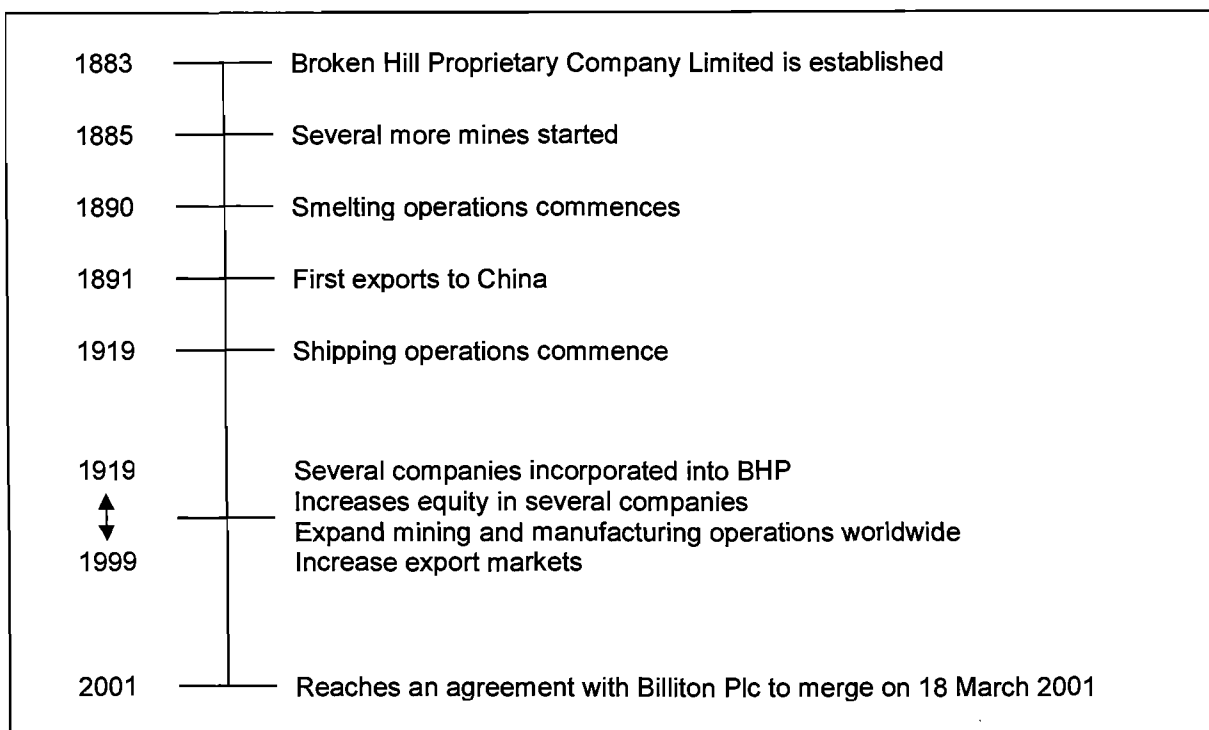
Source: BHPBilliton Intranet Home page

### 3.2 A SHORT HISTORY ON BHP, BILLITON AND THE AMALGAMATED BHPBILLITON

Even before the amalgamation of BHP and Billiton in 2001, both the companies have a rich history of growth and prosperity.

BHP originated in 1883 when black oxide of tin was discovered in the Barrier Ranges of western New South Wales in Australia. Figure 3.2 below shows a summarised history of BHP.

**Figure 3.2:** Chronology of BHP



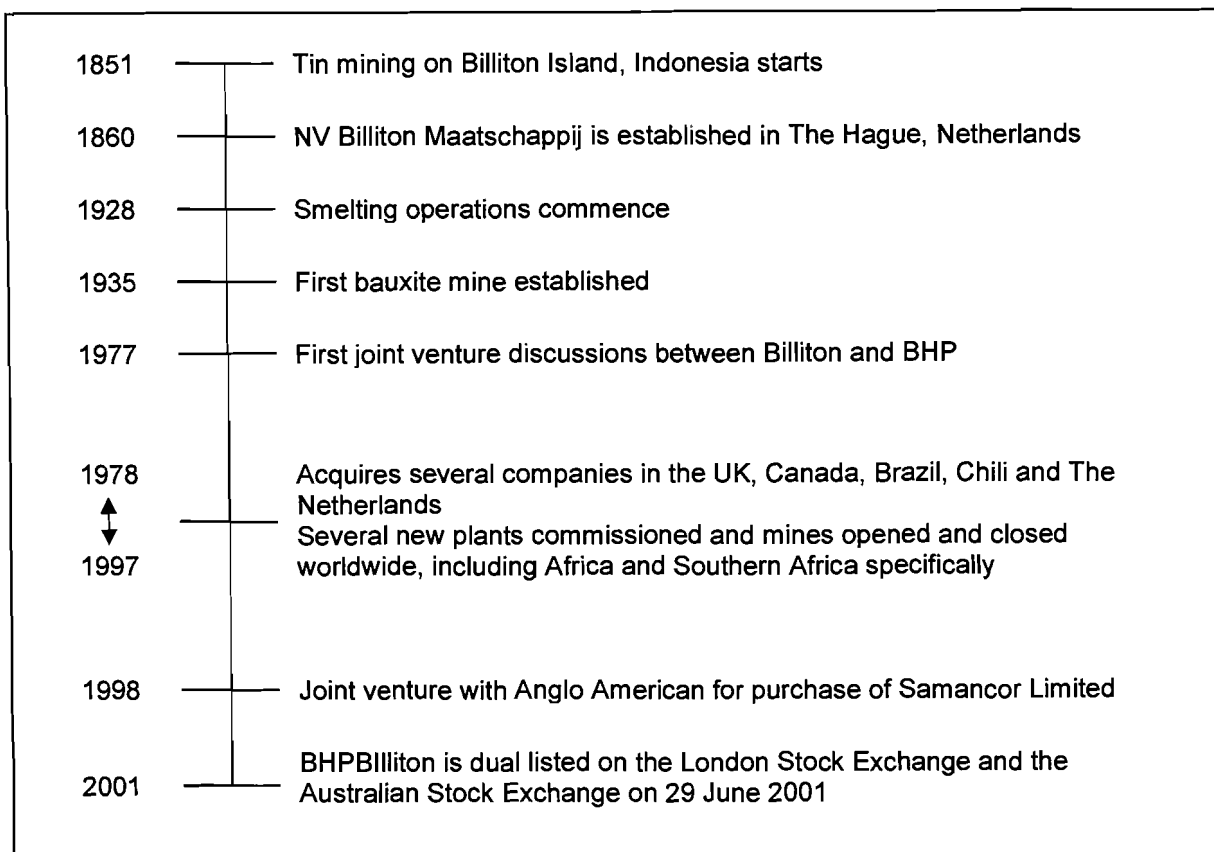
Source: BHPBilliton Intranet Home page

After the establishment of Broken Hill Proprietary (BHP) Company Limited in 1883, it grew from strength to strength. During the early years, not only did silver, lead and zinc mining start, but smelting operations also commenced. Export markets were established with China and shipping operations commenced. The 1990's saw the incorporation of several other companies into BHP and an increase in equity of many existing companies. Export markets, mining activities and manufacturing were expanded. In 1986 BHP becomes the first Australian company to declare 1 billion

Australian dollars net profit. In 2001 an agreement was reached with Billiton to amalgamate.

Billiton's history also starts with tin mining. In 1851 a rich supply of tin is discovered on Billiton (Belitung) Island, Indonesia. Figure 3.3 below depicts a summarised history of Billiton.

**Figure 3.3:** Chronology of Billiton



Source: BHPBilliton Intranet Home page

From the establishment of the first tin mine on Billiton Island in 1851 until 1977, Billiton expanded slowly. From 1978 though the picture changes completely and the company commissions several new plants and mines worldwide, including in South-Africa. In 1998 a joint venture was established between Billiton and Anglo American Corporation for the purchase and de-listing of Samancor Limited, a South-African based chrome and manganese producer, with Billiton holding a 60% share.

On 18 March 2001 BHP reaches an agreement with Billiton to merge. The merger receives Foreign Investment Board approval on 5 June 2001 on the condition that BHPBilliton Group continues a strong Australian focus with headquarters remaining in Melbourne, Australia.

After amalgamation BHPBilliton grew from strength to strength. The acquisition of existing facilities and mines as well as the commissioning of new mines and facilities worldwide is ongoing. Expansion and development into specifically the African continent is currently high on the agenda and several activities are already ongoing in Angola, The Republic of the Congo and lately Ghana.

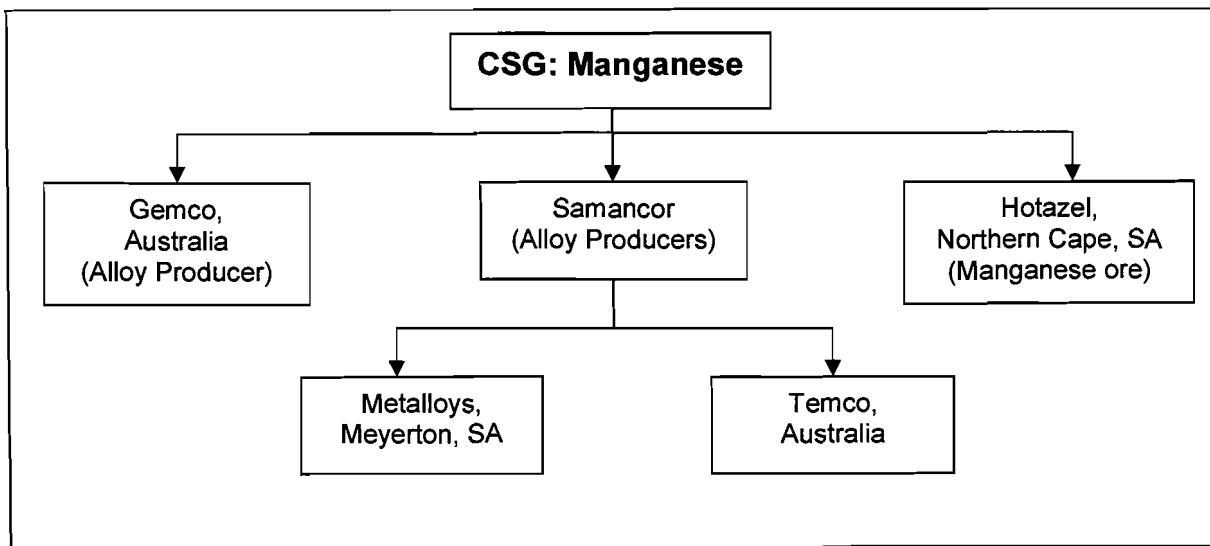
### **3.3 SAMANCOR WITHIN THE MANGANESE CUSTOMER SECTOR GROUP OF BHPBILLITON**

Historically Samancor Limited was acquired by Billiton in 1998 after a joint venture with Anglo American Corporation. Billiton held 60% of the shares. After the amalgamation between BHP and Billiton in 2001, Samancor became part of the Manganese Customer Sector Group, within BHPBilliton.

The Manganese Customer Sector Group represented three percent of the total BHPBilliton revenue for the financial year 2006 / 2007. The principle activities within this Customer Sector Group are the mining of manganese ore and the production of manganese metal and alloys. Figure 3.4 shows the position of Metalloys in the Manganese Customer Sector Group's organisational structure.

Metalloys is one of three manganese alloy producers within the Manganese Customer Sector Group. Metalloys uses eight submerged arc furnaces and an Oxygen Blown Converter to produce high, medium and low carbon manganese alloys used as a by-product by the steel industry worldwide to enhance the quality and characteristics of steel products.

**Figure 3.4: The Manganese Customer Sector Group of BHPBilliton**



Source: BHPBilliton Intranet Home page

### 3.4 THE BHPBILLITON MANAGEMENT STRATEGY

The overall BHPBilliton management strategy is summarised in the BHPBilliton Charter (BHPBilliton Charter, October 2007).

The vision and mission statement of BHPBilliton are as follows:

“WE ARE BHPBILLITON, A LEADING GLOBAL RESOURCES COMPANY.”

Our purpose is to create long-term value through the discovery, development and conversion of natural resources, and the provision of innovative customer and market focussed solutions”.

The vision and mission statement quoted from the BHPBilliton charter are supported by the following **values** also quoted from the charter:

- Safety and the environment – An overriding commitment to health, safety, environmental responsibility and sustainable development.
- Integrity – Including doing what we will say we will do.

- High performance – The excitement and fulfilment of achieving superior business results and stretching our capabilities.
- Win-win relationships – Having relationships which focus on the creation of value for all parties.
- The courage to lead change - Accepting the responsibility to inspire and deliver positive change in the face of adversity.
- Respect for each other – The embracing of diversity, enriched by openness, sharing, trust and teamwork involvement.

The BHPBilliton website also mentions the unique characteristics of BHPBilliton that gives the company a significant competitive advantage:

- Our outstanding assets
- Our growth opportunities (from a deep inventory of projects)
- Customer-centric marketing
- The portfolio effect (managing assets as a portfolio spreads risk and reward)
- The Petroleum Customer Sector Group, giving the ability to pursue growth opportunities in the oil, gas, and energy sector
- Innovation

The BHPBilliton management strategy clearly supports development and innovation in the company as a means of keeping the competitive advantage. This is highlighted in the mission statement containing the words “innovative customer and market solutions” and the company value that specifically refers to this: “Courage to lead change” and the company characteristic “innovation”.

To ensure that this management strategy boils permeates to all operations and all levels in the company, a business excellence model was adopted and is used to verify the level of compliance to the overall management strategy by the different operations across the company.

All business excellence models worldwide are based upon a set of core values and concepts which are found in the leading world class organisations (BHPBilliton, 2007). BHPBilliton accepted the PNQ Business Excellence model, which was adopted from the Brazilian National Quality Foundation (FNQ). The Business Excellence (PNQ) Evaluation Workbook, compiled for BHPBilliton internal use during August 2007 list the fundamentals on which the FNQ Criteria for Excellence are based and are as follows:

- Systematic view
- Organisational learning
- Proactive approach
- Innovation
- Leadership and constancy of purpose
- Vision of the future
- Focus on the customer and the market
- Social responsibility
- Management by fact
- Valuing people

- Management by process
- Results orientation

The Business Excellence (PNQ) Evaluation Workbook explains the innovation fundamental as the implementation of new ideas that create a competitive advantage. It must be put in practice by the organisation by continuously generating original ideas and embodying them in its processes and products, in order to attract new customers and create new markets.

Innovations are not associated only with the speed required in highly competitive environments, but also to simple or complex solutions that may be systematic or not, developed through simple observations or complex analysis. In the same way, they should not be limited to the research and development area, but should rather cover all aspects of the processes and the business.

Cultivating this way of thinking should be a corporate philosophy. In this respect the role of the senior leaders is crucial for maintaining a propitious environment that fosters creativity, generates ideas and implements the new solutions.

### **3.5 STRATEGIC CHANGES AT METALLOYS**

As part of BHPBilliton, Metalloys had to align their management strategies with that of the Manganese Customer Sector Group and BHPBilliton. The Metalloys Sustainable Development Policy and values are directly related to that of BHPBilliton. In order to specifically fulfil the innovation fundamental as included in the BHPBilliton management strategy, Metalloys, Meyerton developed and implemented the Zero-two-one hundred (0:2:100) strategy.

Innovation is specifically driven through the following programs supporting Zero-two-one hundred:

- the Road to Reliability (R2R) initiative

- the Business Improvement (BI) Process
- Six Sigma Principles
- Lean Projects

In all of these initiatives middle managers are key players in the role out, implementation and sustainability of the initiatives.

### **3.6 THE ZERO-TWO-ONE-HUNDRED (0:2:100) STRATEGY**

After Samancor Limited, including Samancor Meyerton, had been acquired by Billiton and became part of the Manganese Customer Sector Group within BHPBilliton, major changes followed.

After amalgamation a major strategic change process was initiated. From 2000 until 2001 Samancor, Meyerton embarked on a major restructuring process, facilitated by Mckinsey. Drastic changes were implemented to regain simplicity within the organisation and to re-focus on its core business, namely manganese alloy production. Management layers were cut and to ensure a unique identity, Metalloys was adopted as new name for the previously Samancor Meyerton.

During 2005 a new management strategy for Metalloys Meyerton was developed and the Zero-two-one-hundred strategy was implemented. To ensure understanding and aligned commitment from all levels of employees within Metalloys, the three main focus points within the company were used as the point of departure for the strategy, namely:

- zero harm to people and the environment;
- maintenance of equipment to ensure availability; and
- utilization of the equipment for production.

To simplify the detail contained in the strategy, to ease verbalising and make it visually attractive, the 0:2:100 notation was created and promoted.

### 3.6.1 Zero (0)

BHPBilliton has a very strong view on safety before production. Serious consequences follow on ignorance of this value. Therefore the Metalloys 0:2:100 strategy places this value as departure point for their strategy. Zero harm at Metalloys includes not only zero harm to people within the company (employees and contractors), but also zero harm to the environment and the communities surrounding Metalloys. The tools used to drive zero harm are:

- 5S - focusing on housekeeping. 5S was rolled out in five consecutive phases, namely Sift, Sort, Shine, Straighten and Sustain. Successful implementation is measured at five levels indicated by a colour code ranging from red to gold. Red means no workplace organisation up to gold that indicates all phases implemented and sustained.
- BBS – a behaviour based safety (BBS) programme aimed at bonding employees to become my brother's keeper voluntarily. This leads to a state where safety norms will be held as values by all employees, each individual will behave responsibly towards safety issues, each individual will be willing, able and enabled to go beyond that call of duty to ensure compliance with safety standards and employee empowerment will be the norm.
- Planned task observations – training is a crucial element to promote safe behaviour with competency declaration as proof of successful training. Planned task observations are used to observe employees during task execution to ensure safe operating procedures are followed and understood, after which they can be declared competent to do an allocated task.

### 3.6.2 Two (2)

No manufacturing company can keep going without a good maintenance system. The “two” in 0:2:100 applies to maintenance activities. One of the targets for Metalloys is to sustain 98% availability of equipment. Or as contained in the 0:2:100-strategy, only 2% unavailability.

The Road to Reliability (R2R) is a maintenance initiative that focuses on the improvement of the maintenance system as well as to ensure Metalloys, Meyerton stays abreast of new technology and equipment available to improve production efficiency and ensure zero harm to people and the environment.

R2R consist of three main processes, which were implemented in phases at Metalloys:

- Equipment strategy development – a specific piece of equipment is identified. It is then broken down into its different components per maintenance discipline and all possible failure modes are listed.
- Work management process – This process follows the equipment strategy development process. The possible failure modes previously identified are matched to the current maintenance activities to determine whether all the failure modes are addressed as part of the current planned maintenance system. Should any discrepancies be identified the current planned maintenance system will be updated to ensure all failure modes are addressed to prevent pre-mature failure of the equipment.
- Reliability improvement – This component of R2R is strongly related to innovation. The Pareto principle is used to identify the top five mega watt hour production loss contributors or the top 5 equipment related problems per month. Predictive condition monitoring of equipment is also used to identify possible pre-mature failures of equipment, for example infra red scanning of electrical equipment. Root cause analysis techniques are then applied to identify root

causes for problems. “Quick fixes” are implemented immediately while longer term initiatives are investigated for feasibility and then implemented.

Middle managers are key to the implementation of R2R. Traditional maintenance middle management positions are mainly responsible for the implementation and sustenance of the initiatives. New middle management positions, for example Reliability Engineers and Maintenance Controllers, were created to facilitate the role out, measure success and facilitate improvements on the process.

### **3.6.3 One-hundred (100)**

With equipment well maintained and available, utilization is the third important focus point in this strategy. Equipment should be utilized 100% to ensure maximum production output. To improve on utilization programs the following tools are used:

- Six Sigma principles - initially Six Sigma was the only innovation program at Metalloys. It was used to manage all initiatives from different plants, different complexities and different sources. It became clear after a while that although Six Sigma is a powerful tool it is not suitable for use in all initiatives. With the implementation of the Business Improvement (BI) process, Six Sigma became one of the tools within BI to use for the evaluation of ideas generated. More complex ideas, needing a lot of statistical analysis are usually done with Six Sigma. Middle managers at the different plants were identified to undergo different levels of Six Sigma training, for example Yellow and Green Belts were trained to manage initiatives of different complexities.
- LEAN Projects – initially as part of Six Sigma, LEAN projects deal with initiatives that dealt with cycle times and recurring processes. The objective of LEAN Projects is to remove waste from a cycle or process. Waste is considered anything that prolongs cycle times or is unnecessary within a process. Middle managers drive LEAN Projects.

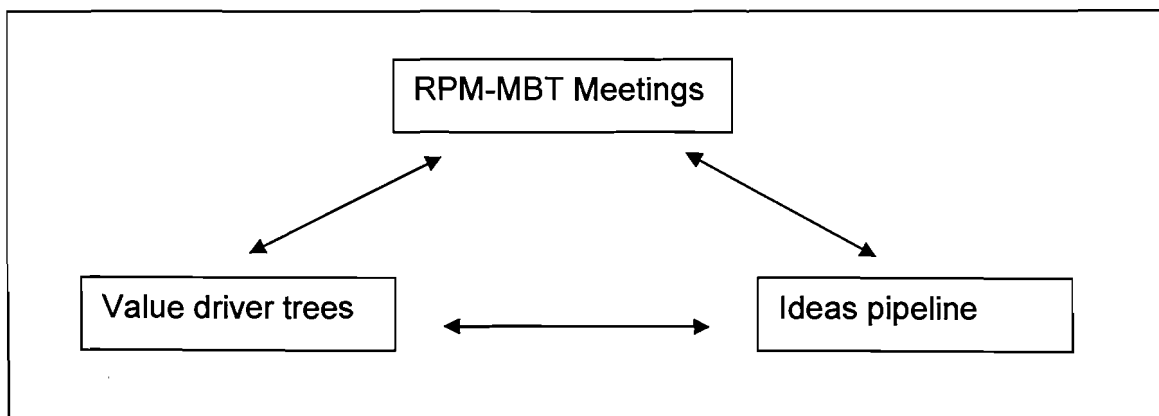
### 3.7 THE BUSINESS IMPROVEMENT (BI) PROCESS

The Business Improvement (BI) process was initiated at Metalloys during October 2007 as the next step to grow and support the zero-two-one-hundred-strategy. BI impacts on all three components of 0:2:100 and is therefore considered a very important tool in broadening the strategy.

A consultant, Partners in Performance (PIP), were contracted to assist with the implementation and role out of the programme. BI implementation teams are formed per plant consisting of Metalloys employees and Business Improvement Partners. The South Plant, one of the production departments at Metalloys, was identified for the initial role out of the process. The rest of the departments were earmarked for role out from January 2008.

The BI process is based on natural teams on all levels. The teams already functioned as part of another initiative, the Behavioural Based Safety programme. BI is the key vehicle for continuous improvement and learning in the organisation and consists of three interrelated elements.

**Figure 3.5:** The interrelationships between the three elements of BI.

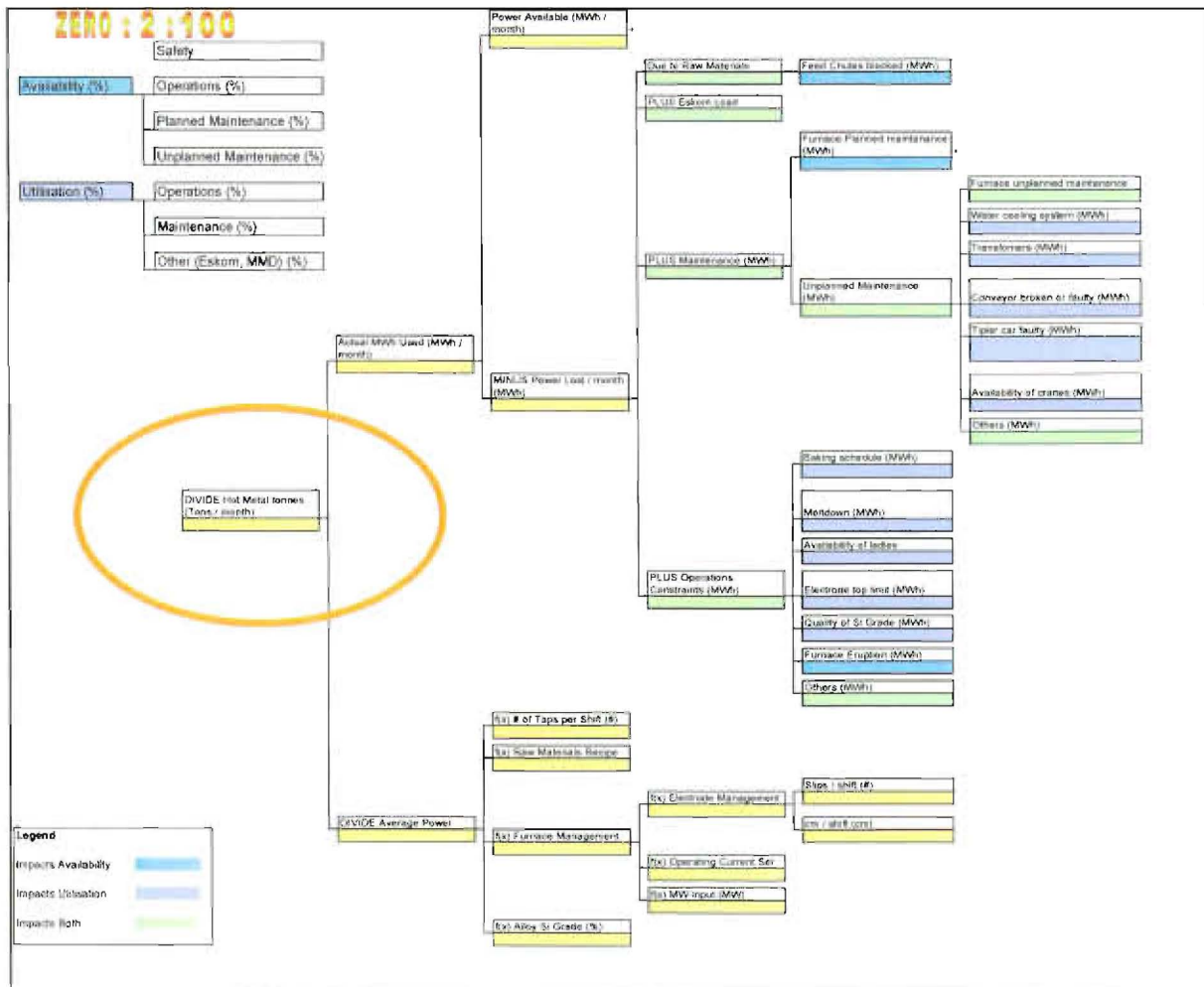


Source: MEXCO presentation (October 2007)

The purpose of the BI process at Metalloys is incorporated in the three interrelated elements of BI:

- Install Results and Progress Management meetings (RPM's) down to the lowest BBS team level. The agendas of the existing BBS teams are broadened to include Production, Cost and Ideas key performance indicators (KPI's). BBS teams are re-branded as Mini Business Teams or MBT's.
- Build an Ideas Pipeline (pulling together all the various ideas systems already implemented).
- The development of detailed operational Value Driver Tree models - Figure 3.6 below.

Figure 3.6: An operational Value Driver Tree



Source: MEXCO presentation (October 2007)

The ideas pipeline or SPARK is at the heart of innovation. Individuals and teams are motivated to register ideas to go into the pipeline. Sources of ideas are:

- Suggestions to improve on safety
- Cost reduction initiatives
- Increased production
- Optimise processes
- Minimize losses
- Reduce waste
- Improve quality
- Increase job satisfaction
- Share knowledge and skills

Individual and team Key Performance Indicators (KPI's) have been set to ensure a healthy number of ideas enter the pipeline on a continual basis. To further aid generation of ideas, idea generation sessions are held with cross functional teams. Value driver trees give an indication of areas for improvement, for example over spending on fixed costs. Ideas will then be generated during an idea generation session to improve on over spending of fixed costs.

Initially all ideas are listed on an opportunity list. Opportunity evaluation sessions will then be held on a regular basis, where the senior manager on the plant with some middle managers will decide on the next steps to take. The following criteria are used for evaluation:

- Will not compromise safety.

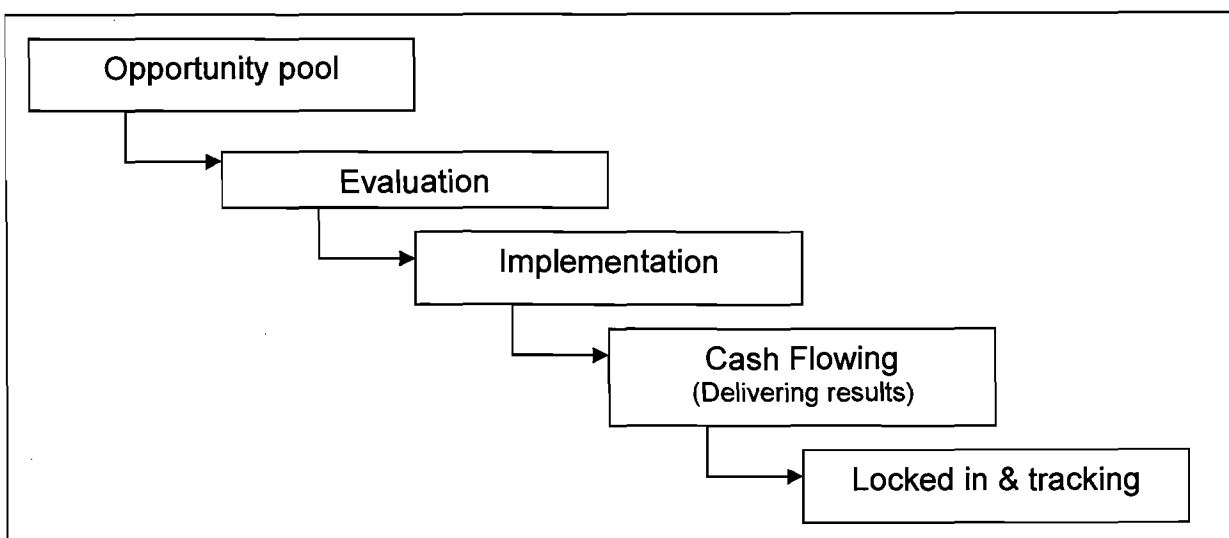
- Will change the way we do things now.
- Is a project, not just a single action.
- Will deliver benefits that can be measured.

After evaluation the opportunity becomes an idea and the following actions can be taken:

- Enter the pipeline
- Park, for re-evaluation at a later stage
- Discard
- Investigate further for re-evaluation after investigation

An idea goes through four gates before it is considered completed (See Figure 3.7).

**Figure 3.7:** The different stages through which an idea move



Source: Business Improvement Training Presentations (April 2007)

From the opportunity pool an idea goes through the following four gates:

- Evaluation - as done by the senior manager and middle managers of the department. The opportunity now becomes an idea and enters the pipeline. An idea owner is assigned who does a more detailed evaluation and complete the relevant documentation to be signed of by the different stakeholders.
- Implementation - as driven by the idea owner, who is a middle manager.
- Cash flowing – the idea goes into cash flow as soon as 50% of the expected EBIT savings can be sustained for three months.
- Locked in – 100% of the expected value of the idea has been sustained for three months.

Throughout the process the BI Partner tracks progress and EBIT results. During and after the locked-in phase the BI Partner ensures wiring is in place to drive sustainability of the idea.

The third component of the BI process consists of Results and Progress Management meetings (RPM's) and Mini Business Team meetings (MBT's), which are held on a weekly basis, with all teams. RPM's are held with middle and top management teams while MBT's are held with teams consisting of a first line supervisor and his direct reports. A structured format is used for both RPM's and MBT's.

Each person taking part in an RPM has a “pact” linked to his or her position and consists of the following:

- A one pager overview, including highlights and low lights for the past week, issues to be resolved with other team members and top priorities for the coming week.

- A list of key performance indicators (KPI's) are provided and the participant needs to explain why certain KPI's were not reached and can ask for support from the team to enable the person to reach the set KPI.
- A list is drawn up of last period actions – with an indication of “Done”, “Not done” or “Not yet due” and participants have to explain why actions were not done and may ask for support from the team to complete the action
- A list of next period actions is distributed which must reflect the low lights and top priorities as indicated on the overview. Team members can also assign actions to other team members on this list.

One of the most important discussion points at each RPM is the progress with the ideas pipeline. The team will look at barriers to success and actions to be taken to ensure progress and keeping the pipeline healthy.

### **3.8 CAUSAL FACTORS TO THIS STUDY**

Clearly Metalloys Meyerton creates opportunities for an entrepreneurial climate to grow and exist. Middle managers are at the heart of implementing and maintaining innovation programmes at Metalloys, Meyerton. Top management play a supportive role and then measures middle management performance against the outcomes from the different innovation programmes that have been implemented. Looking at the continuously improving performance of Metalloys for the past five or six years, these innovation programmes must have contributed to some of the success.

When talking to middle managers though, it becomes clear that they feel that too many initiatives are driven at the same time and the pressure for succeeding with the implementation of the initiatives is very high. The PNQ evaluation done at Metalloys during April 2008 also suggested that too many initiatives are running concurrently and that that might hamper success in the long run. Personnel turnover on middle management level has also increased over the past two to three years, standing at 7% currently, which is still low in comparison with the industry average of 15%. The

main reasons given for this are that all the innovation and improvement systems implemented take too much energy to sustain and that focus is lost on the real reasons for being in this business.

A general perception exists that Metalloys does foster an entrepreneurial climate. This study seeks to assess the perception of middle managers, as the key players in the innovation initiatives at Metalloys, in the current entrepreneurial climate within Metalloys. The casual factors for this study can be summed up with the following questions:

- Are the initiatives currently implemented fostering an entrepreneurial climate?
- Does the strategy followed by top management contribute to the enhancement of corporate entrepreneurship?
- Does this perceived entrepreneurial climate show the true elements of an entrepreneurial organisation or are these merely continual improvement initiatives?

### **3.9 SUMMARY**

BHPBilliton is a world class company with a world class management strategy and systems to support the strategy. Much is done within the company to ensure that corporate strategy is implemented to the lowest operational level at all operations across the world.

Part of the BHPBilliton Management strategy is innovation, striving to give all employees the opportunity to contribute to improvement by sharing their ideas with the company. Many programmes and systems are utilized to foster this innovation strategy. Metalloys, Meyerton is a very good example of one of BHPBilliton's operations that foster innovation through many different programmes. At first it seems that Metalloys, Meyerton has a true entrepreneurial climate. All levels of employees are motivated to participate in idea generation and different improvement

initiatives and there is a huge drive to ensure that the programmes that are implemented are sustained and successful.

Middle managers play an important role in the innovation programmes at Metalloys, Meyerton. Not only do they actively participate in generating ideas and improvements, but are mainly responsible for the implementation of these programmes and to ensure that these are sustained. Top management monitors progress on the different programmes and act as sponsors not only financially, but also to ensure all barriers to success are eliminated.

Against this background, this study asks whether Metalloys, Meyerton has a true entrepreneurial climate and more specifically does the middle management level who are so involved with these initiatives share this perception?

# CHAPTER 4

## RESULTS AND DISCUSSION OF EMPIRICAL RESEARCH

### 4.1 INTRODUCTION

Empirical research design encompasses a full range of systematic approaches to gathering evidence, resulting from what may both be theoretical and practical questions (Smith, 2008: 1). Smith (2008: 1) continues that empirical researchers identify and conceptualise the problem they wish to explore, compose a research question, survey the project to determine how effective their results might be, construct their research plans, select the subjects to be used to answer the research question, collect and analyse data and interpret their findings.

The previous two chapters set the theoretical and business environment within which this study was undertaken. Chapter 4 presents the analysis of the data collected during the empirical research.

### 4.2 RESEARCH METHODOLOGY, DATA GATHERING AND STATISTICAL ANALYSIS

Oosthuizen (2006) developed a questionnaire to determine the entrepreneurial climate within an organisation, which was used for purposes of this study (See Annexure A). The questionnaire was specifically developed to measure the perception of middle managers on the entrepreneurial climate within the organisation. In Section A of the questionnaire, Oosthuizen (2006) identified thirteen constructs that should be evident in an organisation perceived to have an entrepreneurial climate. For each of the constructs five items were identified to evaluate that specific construct. The questionnaire uses a four-point Likert scale as measurement tool and middle managers have to indicate the degree of agreement or disagreement with a specific question or statement.

Section B of the questionnaire is devoted to gathering certain demographical information from the individual correspondents. Information sought includes age, gender, management level and highest academic qualification.

A final section (Section 2) requires the middle manager to evaluate him or herself as well as his or her superior on certain personal entrepreneurial characteristics. Twenty characteristics are listed and again a four-point Likert scale is used. Middle managers have to indicate the level to which a certain characteristic is applicable to them and to their supervisor.

The target population for this study was taken from the middle management level within Metalloys, Meyerton, a manganese alloy producer. Metalloys structurally consists of production, maintenance and services departments. The sample identified was middle managers in the different operational departments and were defined as all persons reporting to a head of department and the direct reports of persons reporting to a head of department. Excluded from this group are middle managers from services departments not directly involved in operational departments.

The current organogrammes within Metalloys were used to identify the positions and individuals to be included in the target population. HSEC (Health, Safety, Environmental and Community) Officials for each of these departments keep updated organogrammes for their departments as part of an ISO 9001:2000 requirement. In total ninety-six participants were identified. The participants are from seven different departments and have various roles either within production, maintenance or as a support function reporting to the head of department.

Data was gathered by distributing hard copies of the questionnaire to individuals who had been identified as being part of the study population. Within each department the HSEC person, as the most central communication point in the department, assisted with the distribution and collection of the questionnaires within a certain department. Preceding the hand out of the questionnaires, electronic mail messages were sent to identified individuals to explain the purpose of the study, to assure them

of the confidentiality with which the information would be handled and to request their support for the completion of the questionnaire by a determined target date.

Follow-up on progress with completion of the questionnaires was done with individuals by means of verbal and electronic communication. A total of sixty one usable questionnaires (66%) were returned from the initial ninety-three distributed.

The data from the sixty one usable questionnaires was then populated into a database and subjected to further statistical analysis.

### **4.3 RESULTS AND DISCUSSION**

Statistical analysis of the questionnaires was done on the following data sets:

- Demographical information
- Assessment of the entrepreneurial characteristics, including the self assessment, superior assessment and a comparison between the two
- Climate survey
- Reliability of the questionnaire measuring the entrepreneurial constructs
- Reliability between the demographical information and the entrepreneurial characteristics

#### **4.3.1 Demographical information**

For this part of the questionnaire respondents had to indicate amongst others, their gender, age, and highest academic qualification.

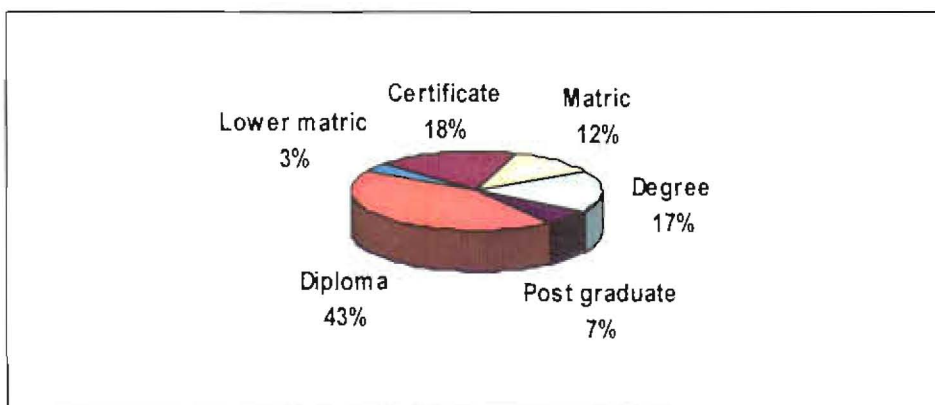
#### 4.3.1.1 Gender and age group

From the total of sixty-one respondents, 7 (11%) are female and 54 (89%) are male. The majority of respondents are in the age group 40 to 49, with a total of 26 (42%) of the total of 61. In the age group 30 to 39, is the second largest group, there are 17 (28%) out of 61. Ages younger than 29 and between 50 and 59 have 9 respondents (15%) each.

#### 4.3.1.2 Highest academic qualification

Sixty respondents reacted to the question on highest academic qualification. Figure 4.3 indicates the distribution of highest academic qualification.

**Figure 4.3:** Respondents by highest academic qualification

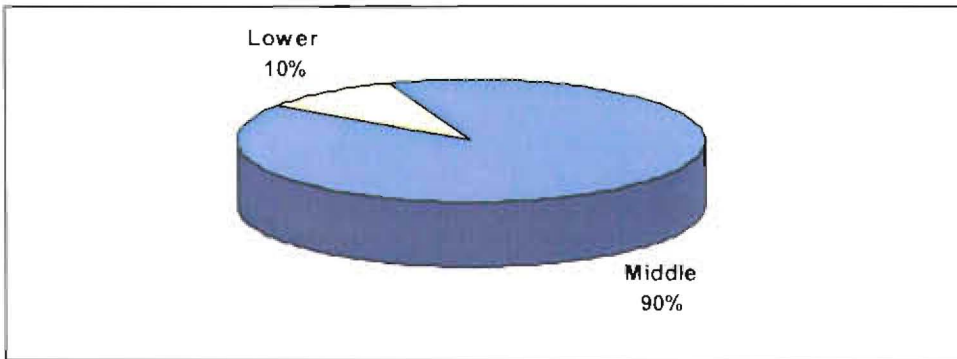


From the 60 respondents indicating their highest academic qualification, 2 (3%) have a lower matric, 7 (12%) have matric, 11 (18%) have certificates, 26 (43%) are in possession of a diploma, 10 (17%) have a degree and 4 (7%) have a post graduate qualification.

#### 4.3.1.3 Management level

On the level of management, only 60 respondents marked their level of management. Figure 4.4 indicates the level of management.

**Figure 4.4:** Management level

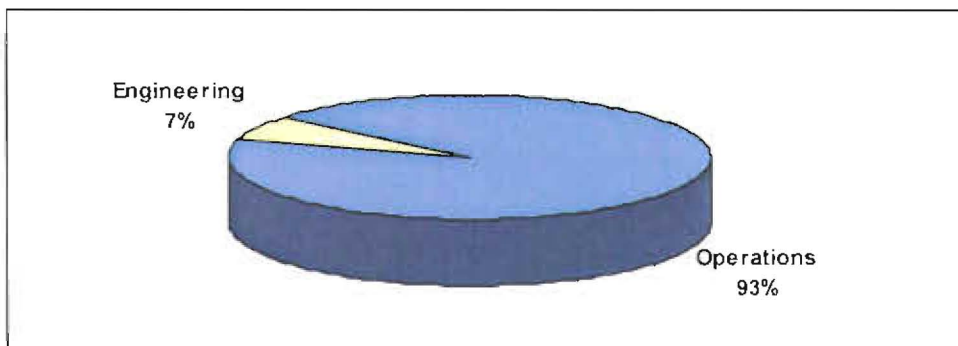


Six (10%) of respondents indicated that they are on the lower management level, but as per the definition of middle management for this study, they are also considered to be middle managers. Fifty-four (90%) respondents indicated that they are from the middle management level.

#### 4.3.1.4 Department

Sixty respondents reacted on the question to indicate for which department they work. Figure 4.5 indicates their responses.

**Figure 4.5:** Respondents by department



From the total of sixty respondents, 56 (93%) indicated that they are involved in an operations department and four (7%) indicated that they are in engineering.

### **4.3.2 Self and superior assessment**

In part two of the questionnaire respondents were requested to evaluate themselves with regards to their entrepreneurial characteristics or competencies. Middle managers then had to do the same evaluation of their superiors, indicating how well each of the characteristics or competencies applies to their superiors. A scale from 1 to 4 was to be used. The questionnaire lists 20 competencies and respondents then had to rate each, from weak to strong. One indicates that the competency is weak and 4 that the competency is strong.

#### **4.3.2.1 Self assessment**

Findings of the self assessment of the middle managers' are listed on table 4.1. The symbols used in this and the following tables respectively, represent the following:

- N – the number of respondents in the selected sample that completed the questionnaire, giving usable data (Levine, Stephan, Krehbiel & Berenson, 2008: 5).
- Mean – the average score on the original 4-point scale of the questionnaire (Levine *et al.*, 2008: 97).
- STD – the standard deviation from the mean. The standard deviation indicates the extent of agreement between the respondents. The lower the deviation the higher the degree of agreement (Levine *et al.*, 2008: 106).

**Table 4.1:** Findings on self-assessment with regards to entrepreneurial characteristics

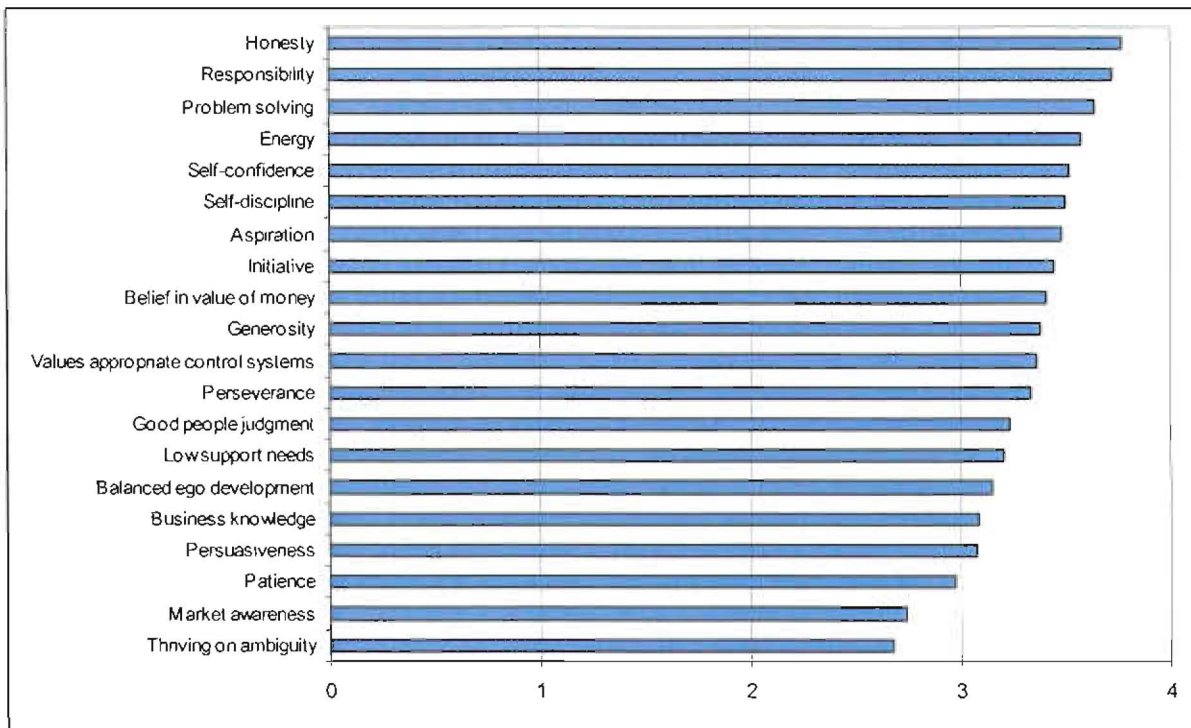
No	Characteristic	N	Mean $\bar{x}$	STD
1	Aspiration	61	3.48	0.57
2	Initiative	61	3.44	0.50
3	Energy	61	3.57	0.64
4	Low support needs	61	3.20	0.68
5	Thriving on ambiguity	60	2.68	0.77
6	Perseverance	61	3.33	0.63
7	Responsibility	61	3.72	0.45
8	Problem solving	61	3.64	0.52
9	Persuasiveness	59	3.07	0.67
10	Self-discipline	60	3.50	0.65
11	Belief in value of money	61	3.41	0.76
12	Self-confidence	60	3.52	0.57
13	Balanced ego development	61	3.15	0.57
14	Market awareness	61	2.74	0.63
15	Generosity	60	3.38	0.64
16	Honesty	61	3.77	0.46
17	Good people judgment	61	3.23	0.64
18	Patience	60	2.97	0.78
19	Business knowledge	61	3.08	0.67
20	Values appropriate control systems	61	3.36	0.48

Relatively low numbers represent disagreement with the characteristic and relatively high numbers represent agreement with the characteristic. Thus, a lower number representing disagreement with the characteristic suggests that the characteristic is perceived to be absent. Likewise, a high number representing agreement with the characteristic suggests that the characteristic is perceived to be present.

The average entrepreneurial scale score of 2.88 indicates that, overall, subjects are in slight agreement with the characteristics, on average, the characteristic might be present. The characteristic honesty ( $\bar{x} = 3.77$ ) obtained the highest mean value with

responsibility ( $\bar{x} = 3.72$ ) second. This indicates a relatively strong presence of these characteristics. Figure 4.4 ranks the characteristics from highest to lowest mean value.

**Figure 4.4:** Self-assessment on characteristics ranked from the highest to lowest mean value



The characteristics problem solving ( $\bar{x} = 3.64$ ), energy ( $\bar{x} = 3.57$ ), self-confidence ( $\bar{x} = 3.52$ ), self-discipline ( $\bar{x} = 3.50$ ), aspiration ( $\bar{x} = 3.48$ ), initiative ( $\bar{x} = 3.44$ ), belief in value of money ( $\bar{x} = 3.41$ ), generosity ( $\bar{x} = 3.38$ ), values appropriate control systems ( $\bar{x} = 3.36$ ), perseverance ( $\bar{x} = 3.33$ ), good people judgement ( $\bar{x} = 3.23$ ), low support needs ( $\bar{x} = 3.20$ ), balanced ego development ( $\bar{x} = 3.15$ ), business knowledge ( $\bar{x} = 3.08$ ) and persuasiveness ( $\bar{x} = 3.07$ ) all scored relatively high, indicating a relatively strong agreement with the characteristic. The characteristics patience ( $\bar{x} = 2.97$ ), market awareness ( $\bar{x} = 2.74$ ) and thriving on ambiguity ( $\bar{x} = 2.68$ ) obtained relative average scores. No relative low scores were indicated.

#### 4.3.2.2 Superior assessment

In evaluating their superiors, middle managers rated their superiors as depicted in Table 4.2.

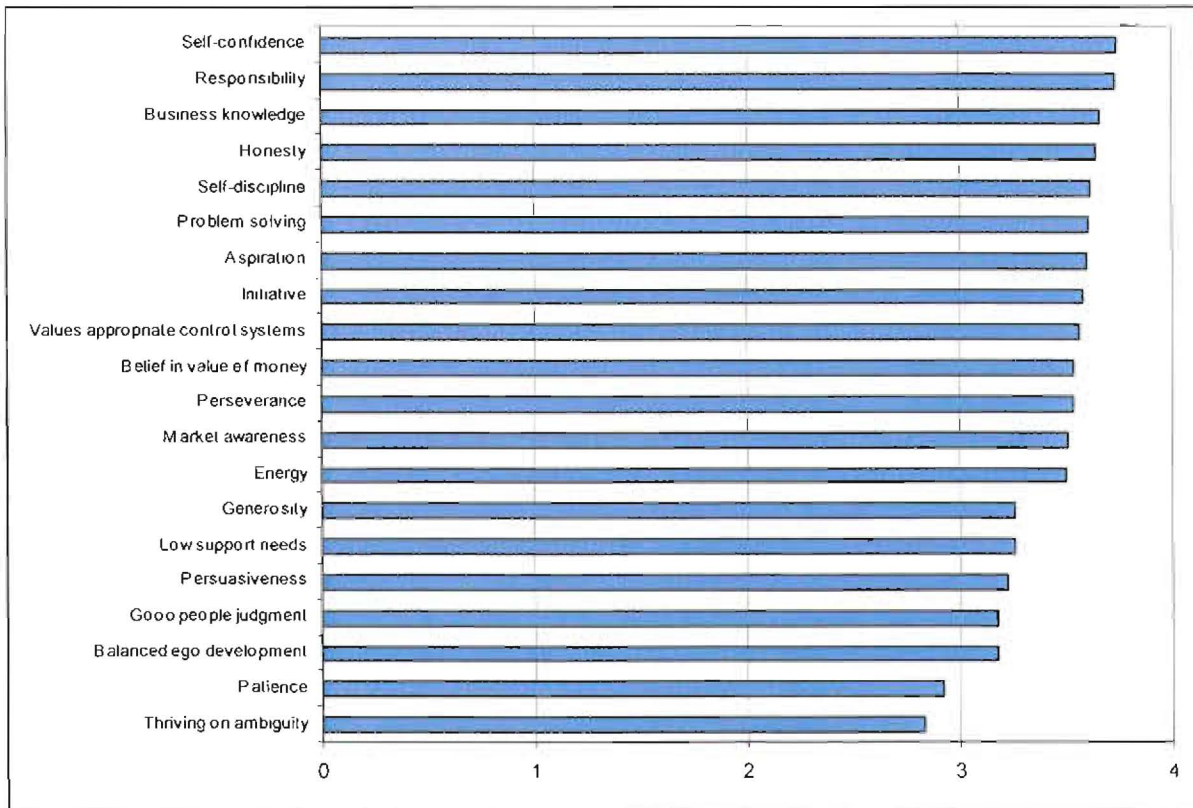
**Table 4.2:** Findings on superior assessment with regards to entrepreneurial characteristics

No	Characteristic	Superior-assessment		
		N	Mean $\bar{x}$	STD
1	Aspiration	60	3.60	0.62
2	Initiative	60	3.58	0.62
3	Energy	60	3.50	0.57
4	Low support needs	61	3.26	0.75
5	Thriving on ambiguity	60	2.83	0.85
6	Perseverance	61	3.54	0.56
7	Responsibility	60	3.73	0.55
8	Problem solving	61	3.61	0.56
9	Persuasiveness	60	3.22	0.74
10	Self-discipline	60	3.62	0.58
11	Belief in value of money	61	3.54	0.62
12	Self-confidence	61	3.74	0.51
13	Balanced ego development	61	3.18	0.67
14	Market awareness	61	3.51	0.57
15	Generosity	61	3.26	0.66
16	Honesty	61	3.64	0.63
17	Good people judgment	61	3.18	0.76
18	Patience	61	2.92	0.90
19	Business knowledge	61	3.66	0.48
20	Values appropriate control systems	61	3.56	0.53

During the superior evaluation, middle managers rated the characteristic self-confidence ( $\bar{x} = 3.74$ ) with the highest mean value, thus this characteristic has a

relatively strong presence. Figure 4.5, below ranks the superior-assessment on characteristics from highest to lowest mean value.

**Figure 4.5:** Superior-assessment on characteristics ranked from the highest to lowest the lowest mean value

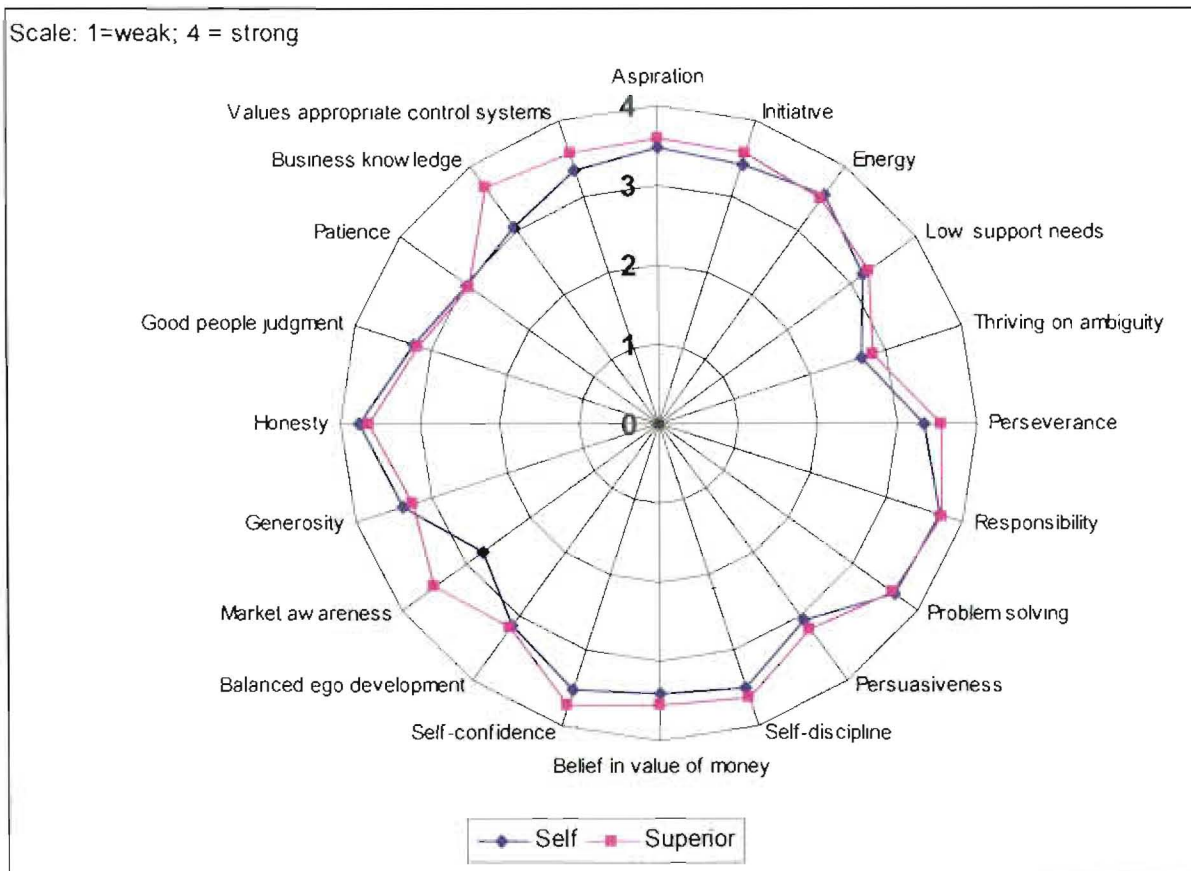


After self-confidence, the characteristic responsibility ( $\bar{x} = 3.73$ ) has the second highest mean value and business knowledge ( $\bar{x} = 3.66$ ) and honesty ( $\bar{x} = 3.64$ ) also fall within the top quartile. The characteristics self-discipline ( $\bar{x} = 3.62$ ), problem solving ( $\bar{x} = 3.61$ ), aspiration ( $\bar{x} = 3.61$ ), initiative ( $\bar{x} = 3.58$ ), values appropriate control systems ( $\bar{x} = 3.56$ ), belief in value of money ( $\bar{x} = 3.54$ ), perseverance ( $\bar{x} = 3.54$ ), market awareness ( $\bar{x} = 3.51$ ), generosity ( $\bar{x} = 3.26$ ), low support needs ( $\bar{x} = 3.26$ ), persuasiveness ( $\bar{x} = 3.22$ ), good people judgement ( $\bar{x} = 3.18$ ), balanced ego development ( $\bar{x} = 3.18$ ), all scored relatively high, indicating a relatively strong agreement with the characteristic. The characteristics patience ( $\bar{x} = 2.92$ ), and thriving on ambiguity ( $\bar{x} = 2.83$ ) obtained relative average scores. No relative low scores were indicated. The standard deviation across all 20 characteristics is relatively low, ranging from 0.48 to 0.90 on a 4-point scale.

### 4.3.2.3 Comparison between self- and superior assessment

To be able to compare the perceptions of middle managers of themselves and those of their superiors, both sets of scores are plotted and presented on a radar diagram. Figure 4.6 displays the changes in values relative to the centre point.

**Figure 4.6:** Comparison between self- and superior assessment



The competencies in which middle managers perceived themselves to be stronger than their superiors are energy, generosity, honesty, good people judgment and patience.

The competencies in which middle managers perceived themselves to be weaker than their superiors are aspiration, initiative, low support needs, thriving on ambiguity, perseverance, persuasiveness, self-discipline, belief in value of money, self-confidence, market awareness, business knowledge and values appropriate control systems.

The competencies in which middle managers perceived themselves to be on par with their superiors are responsibility, problem solving and balanced ego development.

A test for statistical significance (p-values) and effect sizes (d-values) was calculated to examine the relationship between the self and assessments of superiors. Statistical significance tests have the tendency to yield small p-values (indication of significance) as the size of the data set increases. The effect size, however, is independent of the sample size and is a measure of practical significance (Ellis & Steyn, 2003: 51). Table 4.3 indicates the relationship between the self and assessments of the superiors, with mean ( $\bar{x}$ ), standard deviation (s), p-values (p) and d-values (d) for the different constructs.

Effect sizes (d) will be interpreted according to Cohen's guidelines: small effect (d = 0.2), medium effect (d = 0.5) and large effect (d = 0.8). Results with medium effect can be regarded as visible effects and with  $d \geq 0.8$  as practically significant, since it is the result of a difference having a large effect (Ellis & Steyn, 2003: 51-53).

As indicated in table 4.3, there is a statistical significant difference ( $p < 0.05$ ) in the mean values between the self and assessment of superiors for perseverance ( $p = 0.015$ ), self-confidence ( $p = 0.027$ ), market awareness ( $p = 0.001$ ), business knowledge ( $p = 0.001$ ) and value appropriate control systems ( $p = 0.013$ ).

The characteristic of market awareness (d = 0.98) has a large effect. The results indicate that, middle managers perceive themselves to have low market awareness in contrast with their superiors whom they consider to have high market awareness.

The characteristic of business knowledge (d = 0.86) also has a large effect. The results indicate that, middle managers perceive themselves to have far less business knowledge in contrast with their superiors whom they consider to have sound business knowledge.

The characteristic of responsibility (d = 0.02) only has a very small effect. The results indicate that, middle managers perceive themselves to be just as responsible as their superiors.

**Table 4.3:** Statistical significance test values to indicate the relationship between the self and superior assessments

No	Characteristic	$\bar{x}$	<i>s</i>	<i>p</i>	<i>d</i>
1	Aspiration	-0.133	0.791	0.197	0.17
2	Initiative	-0.150	0.709	0.107	0.21
3	Energy	0.067	0.778	0.510	0.09
4	Low support needs	-0.066	0.910	0.576	0.07
5	Thriving on ambiguity	-0.150	0.709	0.107	0.21
6	Perseverance	-0.213	0.661	0.015	0.32
7	Responsibility	-0.017	0.725	0.859	0.02
8	Problem solving	0.033	0.730	0.727	0.04
9	Persuasiveness	-0.136	0.899	0.252	0.15
10	Self-discipline	-0.153	0.784	0.140	0.19
11	Belief in value of money	-0.131	0.826	0.220	0.16
12	Self-confidence	-0.217	0.739	0.027	0.29
13	Balanced ego development	-0.033	0.682	0.709	0.05
14	Market awareness	-0.770	0.783	0.001	0.98
15	Generosity	0.117	0.691	0.196	0.17
16	Honesty	0.131	0.785	0.197	0.17
17	Good people judgment	0.049	0.902	0.672	0.05
18	Patience	0.067	0.936	0.583	0.07
19	Business knowledge	-0.574	0.670	0.001	0.86
20	Values appropriate control systems	-0.197	0.601	0.013	0.33

#### 4.3.3 Climate survey

Oosthuizen (2006) identified thirteen dimensions or constructs that need to be present for an organisation to be conducive to an entrepreneurial climate. Five statements for each dimension were formulated, in total sixty-five statements, were put in random order. Respondents had to indicate their degree of agreement or disagreement with each statement (1 = strongly disagree and 4 = strongly agree).

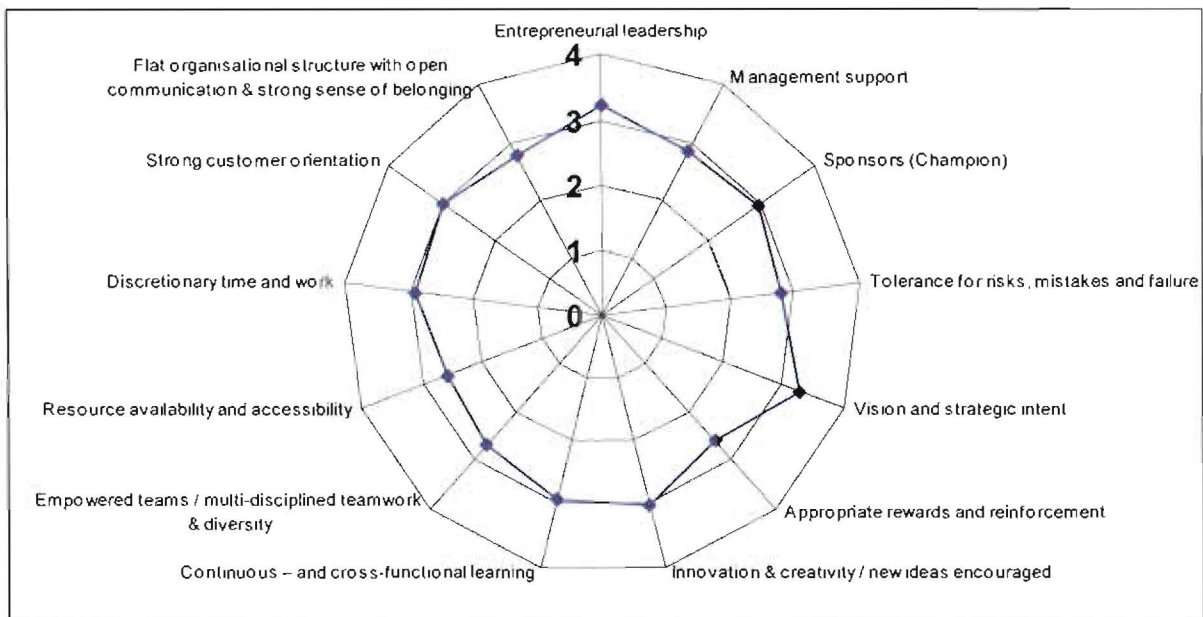
The findings of the survey are tabled below.

**Table 4.4:** Entrepreneurial climate survey results

	<b>Construct</b>	<b>N</b>	<b>Mean</b>	<b>STD</b>
1	Entrepreneurial leadership	61	3.226	0.489
2	Management support	61	2.855	0.489
3	Sponsors (Champion)	61	2.941	0.575
4	Tolerance for risks, mistakes and failure	61	2.789	0.493
5	Innovation & creativity / new ideas encouraged	61	3.016	0.505
6	Appropriate rewards and reinforcement	61	2.564	0.605
7	Vision and strategic intent	61	3.243	0.514
8	Discretionary time and work	61	2.905	0.534
9	Empowered teams / multi-disciplined teamwork & diversity	61	2.669	0.491
10	Resource availability and accessibility	61	2.576	0.586
11	Continuous – and cross-functional learning	61	2.918	0.449
12	Strong customer orientation	61	2.968	0.530
13	Flat organisational structure with open communication & strong sense of belonging	61	2.791	0.446
<b>Total</b> (Average of climate survey items)		61	2.882	0.382

The findings of the survey are depicted graphically by first using a radar graph (Figure 4.7) and then a clustered bar chart (Figure 4.8). The radar graph displays the changes in values relative to the lowest point and provides an overview of the current entrepreneurial climate.

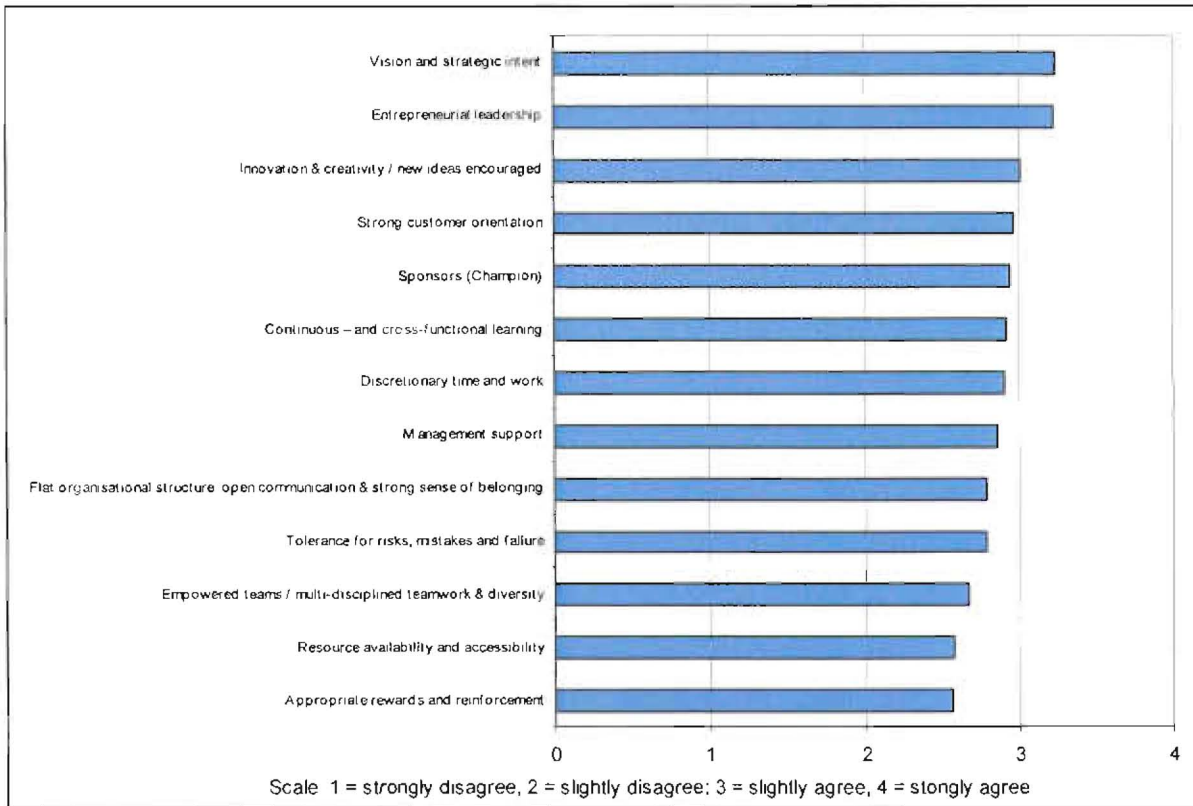
**Figure 4.7:** Entrepreneurial climate analysis – radar graph



The bar chart (Figure 4.8) compares the mean values across the constructs, ranked from highest to lowest score.

From the radar graph, the constructs furthest from lowest point are vision and strategic intent and entrepreneurial leadership, indicating that middle managers perceive these constructs to have a strong presence. The constructs appropriate rewards and reinforcement and resource availability and accessibility are nearest to the lowest point and this indicates that middle managers perceive these constructs to have a low presence.

**Figure 4.8:** Entrepreneurial climate analysis – clustered bar, ranked from highest to lowest mean value



From the clustered bar chart, the constructs with the highest mean values are vision and strategic intent ( $\bar{x} = 3.243$ ), entrepreneurial leadership ( $\bar{x} = 3.226$ ) and innovation & creativity / new ideas encouraged ( $\bar{x} = 3.016$ ). This indicates a relatively strong agreement with the statements. The constructs strong customer orientation ( $\bar{x} = 2.968$ ), sponsors ( $\bar{x} = 2.941$ ), continuous – and cross-functional learning ( $\bar{x} = 2.918$ ), discretionary time and work ( $\bar{x} = 2.905$ ), management support ( $\bar{x} = 2.855$ ), flat organisational structure with open communication & strong sense of belonging ( $\bar{x} = 2.791$ ), tolerance for risks, mistakes and failure ( $\bar{x} = 2.789$ ), empowered teams / multi-disciplined teamwork & diversity ( $\bar{x} = 2.669$ ), resource availability and accessibility ( $\bar{x} = 2.576$ ) and appropriate rewards and reinforcement ( $\bar{x} = 2.564$ ) all obtained relatively average scores.

The average entrepreneurial scale score of 2.882 indicates that, overall, subjects are in slight agreement with the statements and suggests that middle managers might perceive the statements to be somewhat true. Note that the standard deviation,

across all 13 constructs are fairly average, ranging from 0.446 to 0.605, on a 4-point scale.

#### 4.3.4 Reliability of the questionnaire measuring the entrepreneurial constructs

In order to determine the internal consistency between the constructs of the questionnaire, Cronbach alpha coefficients were calculated (Schimtt, 1996: 350). The Cronbach alpha coefficient is based on the average correlation of variables within a test. The greater the Cronbach alpha coefficient, the more reliable the scale. A Cronbach alpha coefficient greater than 0.7 could be interpreted as reliable and internally consistent (Schimtt, 1996: 351; Cortina, 1993: 99).

Table 4.5 shows the reliability and internal consistency between the different constructs.

**Table 4.5:** Cronbach alpha to indicate reliability and internal consistency of constructs

	<b>Construct</b>	<b>Cronbach alpha</b>
1	Entrepreneurial leadership	0.710
2	Management support	0.614
3	Sponsors (Champion)	0.777
4	Tolerance for risks, mistakes and failure	0.490
5	Innovation & creativity / new ideas encouraged	0.627
6	Appropriate rewards and reinforcement	0.737
7	Vision and strategic intent	0.767
8	Discretionary time and work	0.658
9	Empowered teams / multi-disciplined teamwork & diversity	0.653
10	Resource availability and accessibility	0.748
11	Continuous – and cross-functional learning	0.550
12	Strong customer orientation	0.725
13	Flat organisational structure with open communication & strong sense of belonging	0.497

Table 4.3 indicates that six of the thirteen constructs have acceptable reliability. These are entrepreneurial leadership (0.710), sponsors / champion (0.777), appropriate rewards and reinforcement (0.737), vision and strategic intent (0.767), resource availability and accessibility (0.748) and strong customer orientation (0.725). These constructs can thus be considered as reliable and internally consistent. Seven of the thirteen constructs have not acceptable reliability and the three lowest Cronbach Alpha coefficients include tolerance for risks, mistakes and failure (0.490), continuous and cross-functional learning (0.550) and flat organisational structure with open communication & strong sense of belonging (0.497).

#### **4.3.5 Reliability between the demographic variables and entrepreneurial constructs**

In this study, p-values and effect sizes were calculated between mean values to examine the relationship between the constructs and some of the demographic variables. Table 4.6 indicates the reliability between the constructs and the demographic variable gender.

As indicated by Table 4.6 (turn the page), there is a statistical significant difference ( $p < 0.05$ ) in the mean values between male and female in relation to the constructs innovation & creativity / new ideas encouraged ( $p = 0.047$ ) and the construct continuous and cross-functional learning ( $p = 0.077$ ).

The variable gender has a large effect on the construct innovation and creativity / new ideas encouraged ( $d = 0.79$ ). The results indicate that male respondents have a more positive experience concerning the construct innovation and creativity / new ideas encouraged in comparison with female respondents. This can be regarded as a practical significant difference.

**Table 4.6:** The reliability between the constructs and the demographic variable gender

	Construct	Male			Female			p	d
		N	$\bar{x}$	STD	N	$\bar{x}$	STD		
1	Entrepreneurial leadership	54	3.19	0.49	7	3.48	0.41	0.137	0.60
2	Management support	54	2.82	0.49	7	3.11	0.45	0.137	0.60
3	Sponsors (Champion)	54	2.93	0.57	7	3.06	0.65	0.575	0.20
4	Tolerance for risks, mistakes and failure	54	2.76	0.48	7	3.00	0.53	0.233	0.45
5	Innovation & creativity / new ideas encouraged	54	2.97	0.49	7	3.37	0.51	0.047	0.79
6	Appropriate rewards and reinforcement	54	2.56	0.61	7	2.63	0.60	0.767	0.12
7	Vision and strategic intent	54	3.27	0.50	7	3.03	0.58	0.245	0.42
8	Discretionary time and work	54	2.9	0.52	7	2.90	0.69	0.843	0.06
9	Empowered teams	54	2.65	0.51	7	2.80	0.33	0.457	0.29
10	Resource availability and accessibility	54	2.58	0.57	7	2.54	0.76	0.874	0.05
11	Continuous – and cross-functional learning	54	2.88	0.44	7	3.20	0.43	0.077	0.72
12	Strong customer orientation	54	2.99	0.54	7	2.77	0.40	0.301	0.41
13	Flat organisational structure with open communication & strong sense of belonging	54	2.79	0.44	7	2.80	0.50	0.955	0.02

The variable gender also has a large effect on the construct continuous and cross-functional learning ( $d = 0.72$ ). The results indicate that female respondents have a more positive experience concerning the construct continuous and cross-functional learning in comparison with male respondents. This can be regarded as a practical significant difference.

The fact that the female sample ( $n = 7$ ) is very small, might have an effect on the  $d$ -values (Ellis & Steyn, 2003: 51).

Table 4.7 indicates the reliability between the constructs and the demographic variable age for the age groups younger than 40 years and older than 40 years.

**Table 4.7:** The reliability between the constructs and the demographic variable age

	Construct	< 40			≥ 40			P	d
		N	$\bar{x}$	STD	N	$\bar{x}$	STD		
1	Entrepreneurial leadership	26	3.31	0.59	35	3.16	0.40	0.223	0.27
2	Management support	26	3.02	0.44	35	2.73	0.49	0.019	0.60
3	Sponsors (Champion)	26	3.16	0.45	35	2.78	0.61	0.009	0.63
4	Tolerance for risks, mistakes and failure	26	2.88	0.56	35	2.72	0.44	0.235	0.27
5	Innovation & creativity / new ideas encouraged	26	3.27	0.45	35	2.82	0.47	0.001	0.94
6	Appropriate rewards and reinforcement	26	2.75	0.52	35	2.42	0.63	0.042	0.50
7	Vision and strategic intent	26	3.36	0.49	35	3.15	0.51	0.120	0.40
8	Discretionary time & work	26	3.01	0.49	35	2.82	0.55	0.197	0.32
9	Empowered teams	26	2.85	0.35	35	2.53	0.54	0.014	0.57
10	Resource availability and accessibility	26	2.72	0.56	35	2.47	0.59	0.096	0.43
11	Continuous – and cross-functional learning	26	3.12	0.37	35	2.77	0.45	0.002	0.76
12	Strong customer orientation	26	2.95	0.48	35	2.98	0.57	0.802	0.06
13	Flat organisational structure with open communication & strong sense of belonging	26	2.92	0.46	35	2.69	0.42	0.052	0.48

As indicated by Table 4.7, there is a statistical significant difference ( $p < 0.05$ ) in the mean values between the age groups younger than 40 and older than 40 in relation to the constructs management support ( $p = 0.019$ ), sponsors ( $p = 0.009$ ), innovation & creativity / new ideas encouraged ( $p = 0.001$ ), appropriate rewards and reinforcement ( $p = 0.042$ ), empowered teams ( $p = 0.014$ ) and continuous and cross-functional learning ( $p = 0.002$ ).

The variable age group has a medium effect on the constructs management support ( $d = 0.60$ ), sponsors ( $d = 0.63$ ) and continuous and cross-functional learning ( $d = 0.76$ ). It has a large effect on the construct innovation & creativity / new ideas encouraged ( $d = 0.94$ ). This result indicates that respondents younger than 40 years have a more positive experience concerning the construct continuous and cross functional

learning in comparison with the age group 40 and older. This can be regarded as a practical significant difference.

#### **4.4 SUMMARY**

The empirical research done for this study was of a quantitative nature. A survey questionnaire was used to attempt to measure whether an entrepreneurial climate exists at Metalloys, Meyerton as defined in the literature study done in chapter 2.

From the self and superior assessments on entrepreneurial characteristics or competencies done, it can be viewed that both middle managers and their superiors have the ability to behave entrepreneurially indeed. The scores obtained fall between 2 and 3, and this serves to indicate that some work still has to be done to achieve the ultimate goal of being strong (scoring 4) in terms of entrepreneurial competencies or characteristics.

From the self-assessment, entrepreneurial competencies that need specific focus and development are persuasiveness, patience, market awareness and thriving on ambiguity. The superior-assessment revealed that attention should be given to patience, thriving on ambiguity, good people judgment and balanced ego development.

With reference to the entrepreneurial climate within Metalloys, Meyerton the conclusion is that it is not optimally entrepreneurial and initiatives implemented that should stimulate entrepreneurial behaviour, might fall short. All constructs measured are evidently present, but not to the level one would expect of an organisation that is considered to foster an entrepreneurial climate.

# CHAPTER 5

## CONCLUSIONS AND RECOMMENDATIONS

### 5.1 INTRODUCTION

BHPBilliton considers itself to be one of the most successful *global* resources companies and that the company is successful and growing is evident just by looking at the rate at which it has expanded over the past few years and the excellent returns shareholders got on their investments. A sound business strategy is in place, support structures exist and leading management practices are all part of their recipe for success.

Traditional ways of doing business is not a guarantee for success in the ever faster changing global economy in which companies operate. Not only are companies faced with economic challenges, but are hard pressed to conserve the environment, especially if it is a resources company.

BHPBilliton realised at an early stage that supporting innovation and giving employees the opportunity to be innovative should be part of their strategy, if they wanted to stay abreast of their competition. The top management team at Metalloys, Meyerton, part of the Manganese Customer Sector Group within BHPBilliton, implemented various initiatives and programmes that support innovation to align themselves with the BHPBilliton strategy and to ensure their success in the organisation and the global economy.

Innovation and corporate entrepreneurship go hand in hand, but merely implementing initiatives and programmes that support innovation, is not enough to ensure that a true entrepreneurial climate will grow and exist within an organisation.

### 5.2 CONCLUSIONS

In the previous chapter the findings of the empirical research were discussed in detail. Conclusions from these findings follow.

### **5.2.1 Conclusions on demographic information**

Only 7% (11 out of 61) of the respondents are female. As manganese alloy production takes place in a very harsh and dirty environment, there are few females at the operational level. Services departments, remote from actual operations, for example Human Resources, consist mainly of females.

### **5.2.2 Conclusions on entrepreneurial characteristics**

Conclusions following the self- and assessment of superiors, pertaining to entrepreneurial characteristics/competencies are listed below.

#### **5.2.2.1 Self assessment**

The majority of characteristics fall within the acceptable range of 3 to 4. Therefore, in general, it can be viewed that middle managers have the ability to behave in an entrepreneurial way. Even though most of the characteristics fall within the acceptable range, there is no reason to think that improvement is not necessary. Ultimately the rating should be “strong” (4) in all the characteristics.

The characteristics that do pose some concern are those in the bottom quartile and include persuasiveness, patience, market awareness and thriving on ambiguity. These characteristics influence entrepreneurial behaviour in the following ways:

- **Persuasiveness.** As explained in chapter 2, middle managers play an important role to motivate and inspire lower level employees to act entrepreneurially. They also play an important role in convincing top management to make resources available for certain projects. Persuasiveness therefore is a very important characteristic to possess for those middle managers who want to be successful as entrepreneurs.
- **Patience.** New systems, projects, products and ideas take time to develop, implement and show results. The middle manager driving and working on these

developments must be patient in order to ensure the desired end result is achieved. Eagerness should not overrule good business results.

- **Market awareness.** Manganese alloy producers compete on a global scale, with supply and demand changes as a constant part of the business. The entrepreneurial middle manager must be aware of these changes to enable an in-time change to make the best use of market opportunities.
- **Thriving on ambiguity.** Entrepreneurs thrive in unstructured, confusing environments with few answers, because such environments present great opportunities for exploitation.

#### **5.2.2.2 Superior assessment**

In general it can be viewed that superiors of middle managers also have the ability to behave in an entrepreneurial way, because the majority of characteristics fall within the acceptable range of 3 to 4. Even though most of the characteristics do fall within the acceptable range, there is no reason to think that improvement is not necessary. Ultimately the rating should be “strong” (4) in all the characteristics.

Characteristics in the top quartile are self-confidence, responsibility, business knowledge and honesty. Patience and thriving on ambiguity are in the bottom quartile and with those good people judgment and balanced ego development.

Good people judgment and balanced ego development with the lowest scores need further explanation to get a better understanding of their importance for entrepreneurial behaviour to manifest itself in the organisation:

- **Good people judgment.** As the success of the organisation and the success of individuals within the organisation depend on other people like fellow employees, subordinates and superiors, good people judgment is of the utmost importance. Characteristics in people that are irreverent to successful completion of their tasks should be ignored. Also important is being able to identify those strong

characteristics in an individual that can be applied so that the best comes from that individual and the team can at best succeed.

- **Balanced ego development.** This characteristic goes hand in hand with sharing success. Individuals and teams should get the recognition they deserve for successes they achieved. Superiors should be careful not to claim successes for themselves, thus de-motivating subordinates to act as entrepreneurs.

### **5.2.2.3 Comparison between self - and superior assessment**

At first glance the temptation is to offset the superiors' higher scores on the business knowledge and the market awareness characteristics, against the lower scores achieved by the middle managers. This would imply that the superiors' perceived ability to be strong must make up for the perceived weaker performance of the middle managers in these areas. This would compromise the position of the middle manager to think, act and behave in an entrepreneurial way, because that would imply dependence on the superior in the pursuit of entrepreneurial activities. Following the self assessment of middle managers and the assessment of their superiors, the following conclusions are made:

- In general middle managers have the ability to behave entrepreneurially.
- The characteristics that do pose some concern on the middle management level are persuasiveness, patience, market awareness and thriving on ambiguity
- The superior assessment revealed that middle managers' superiors have the ability to behave entrepreneurially.
- The characteristics that do pose some concern are patience, thriving on ambiguity, good people judgment and balanced ego development.

- Even though most of the rated characteristics fall within the acceptable range, this is no reason to sit back and become complacent. Ultimately the rating should be “strong” (4) in all the characteristics.

### **5.2.3 Conclusions on entrepreneurial climate**

A more detailed look at each of the thirteen constructs reveals the following about the entrepreneurial climate and behaviour within Metalloys, Meyerton:

- Vision and strategic intent. As discussed in chapter 3, Metalloys put a lot of effort into developing a strategy, with even more effort to communicate and role out the strategy to the lowest level. Three years have passed and key performance indicators and general alignment are still focusing on 0:2:100. Middle managers know the strategic intent and this guides them to set priorities.
- Entrepreneurial leadership. Metalloys have a long term view of the organisation and effort is made to communicate the vision and longer term plans to all levels of employees. The balance between production on the one hand and safety, health and the environment on the other is good. Opportunities are created in a very structured way, for employees to think in innovative ways and are challenged to bring their ideas for improvement to the table. Management proactively seeks to maximize value from opportunities generated, even though some constraints do exist regarding the availability of resources.
- Innovation and creativity / new ideas encouraged. As mentioned, opportunities for employees to be innovative are created through structures such as the Road to Reliability and Business Improvement. The process is further encouraged by setting idea generation as a key performance indicator for individuals and teams at lower levels. The organisational structure was adopted to make specific persons available to assist with the idea generation process and to track progress and EBIT contributions from ideas that have been generated.

- Strong customer orientation. Due to the nature of Metalloys' product, external customer involvement is limited, but a strong focus exists on internal customer service. For example, the production plants are considered to be the customer of the raw materials department and even within a department, production is considered the customer of maintenance. A system (the abnormal occurrence register) is in place through which internal customer complaints can be registered by one department against the other. The department at fault must then investigate the complaint and put actions in place (recorded on the abnormal occurrence register) to prevent recurrence of the incident.
- Sponsors. As discussed in chapter 3, a structured approach exists to manage ideas generated by employees. Idea implementers are identified and Results and Progress Management meetings (RPM's) are used to give feedback on progress. Periodically feedback is given to employees who generated the ideas to keep them informed about the progress.
- Continuous and cross-functional learning. Ample opportunities for learning and growth exist. Employees are encouraged to stay abreast of developments in their functional field. Knowledge is shared across departments and different organisations within BHPBilliton, especially by production units, using equipment that is related. Cross functional teams are used for Six Sigma and Lean projects.
- Discretionary time and work. Some autonomy and freedom is allowed for people to do their own work and safely divert from assigned tasks to explore new ideas, without having to ask permission. Spending excessive time on developing ideas however can be regarded as only marginally acceptable.
- Management support. As stated, formal structures exist to ensure management is aware of new ideas generated and gives their support for the implementation of these ideas. Some employees however sometimes feel that they are not supported, because the ideas they have generated are placed on hold, maybe

due to a lack of funds or other resources. In some instances an idea might not be viable and is then discarded.

- Flat organisational structure with open communication and strong sense of belonging. Having to make a decision without having to go through some justification and approval is still a challenge. Open communication structures are established through Mini Business Teams and Behavioural Based Safety Teams, but even though these structures exist, employees still experience some barriers to open communication. Resignations are becoming an increasing problem, especially with the shortage of skilled workers.
- Tolerance for risks, mistakes and failure. As manganese alloy production is inherently dangerous, calculated risks are taken from time to time. A rigorous risk assessment process is in use and the key word to any experiment, or new task, or idea is: "Have you done the risk assessment, and what mitigating actions have been implemented to keep the risk as low as reasonably practicable (below ALARP)?"
- Empowered teams / multi-disciplined teamwork and diversity. Functional teams (Mini Business Teams) are empowered through the Business Improvement Process and the Behavioural Based Safety programme. Within their teams they have some freedom in deciding on how the team will be managed – teams can even decide to take disciplinary action against team members that do not comply with the expectations as set out by the pact agreement (team agreement). Cross-functional teams are not common place, but some teams do exist for Six Sigma and Lean projects.
- Appropriate rewards and reinforcement. Recognition and rewards with specific reference to innovations and new ideas through the Business Improvement Process, do not exist. With a previous idea programme (now discontinued) rewards were given and some employees now feel reluctant to generate ideas, because there is no reward for their contributions.

The highest mean score in the range is 3.243 and the lowest is 2.564. These scores both fall within the range of 2 (slightly disagree) to 3 (slightly agree). This indicates that the overall climate at Metalloys, Meyerton is not optimally entrepreneurial and initiatives implemented that should stimulate entrepreneurial behaviour might fall short. All constructs measured are evidently present, but not to the level one would expect of an organisation that is considered to foster an entrepreneurial climate.

### **5.3 RECOMMENDATIONS AND ACTION PLAN**

- Vision and strategic intent. The vision and strategic intent is clear to middle managers. Departmental objectives are aligned with company objectives. It is important though to ensure that middle managers take ownership of the announced visions and strategies and that they embrace it. A next step needed might be to take the current innovation activities and combine them in a formal strategy for entrepreneurship. Antoncic (2006: 49) indicates that corporate entrepreneurship strategy making has also been recognized as an important element in organisational and economic development, performance and wealth creation. Covin and Miles (2007: 183) confirms this when stating that corporate venturing is most productive as a path to superior corporate performance when practiced in a strategic manner.
- Entrepreneurial leadership. Middle managers are involved with innovative initiatives, by making them responsible for programmes and initiatives such as the Business Improvement Process, including idea generation, and Road to Reliability. Entrepreneurial leadership can be improved by developing the entrepreneurial competencies of middle managers and by establishing entrepreneurship as the dominant logic to improve the business.
- Innovation and creativity / new ideas encouraged. Metalloys' organisational structure was adopted to make specific persons available to assist with the idea generation process and to track progress and EBIT contributions from ideas generated. Leadership development programmes should include innovation as a central topic.

- Strong customer orientation. Due to the nature of Metalloys' product, external customer involvement is limited, but a strong focus exists on internal customer service. For example, the production plants are considered the customer of the raw materials department and even within a department, production is considered to be the customer of maintenance. A system (the abnormal occurrence register) is in place where by internal customer complaints can be registered by one department against the other. The department at fault must then investigate the complaint and put actions in place (recorded on the abnormal occurrence register) to prevent recurrence of the incident.
- Sponsors. As discussed in chapter 3, a structured approach exists to manage ideas generated by employees. Idea implementers are identified and Results and Progress Management meetings (RPM's) are used to give feedback on progress. Periodically feedback is given to employees who have generated the ideas to keep them informed about the progress.
- Continuous and cross-functional learning. Ample opportunities for learning and growth exist. Employees are encouraged to stay abreast of developments in their functional field. Knowledge is shared across departments and different organisations within BHPBilliton, especially by production units, using equipment that is related. Cross functional teams are also used for Six Sigma and Lean projects.
- Discretionary time and work. Some autonomy and freedom is allowed for people to do their own work and safely divert from assigned tasks to explore new ideas, without having to ask permission. Spending excessive time on developing ideas however can be regarded as only marginally acceptable.
- Management support. As stated, formal structures do exist to ensure management is aware of new ideas generated and gives their support for the implementation of these ideas. Some employees however sometimes feel that

they are not supported, because the ideas they generated are placed on hold, maybe due to a lack of funds or other resources available for immediate implementation, or their ideas are discarded as not being viable. Bhardwaj *et al.* (2007a: 134) confirm that management support can take many forms, including championing innovative ideas, providing necessary resources or expertise, and institutionalizing the entrepreneurial activity within the system and processes of the firm.

- Flat organisational structure with open communication and strong sense of belonging. Having to make a decision without having to go through some justification and approval is still a challenge. Open communication structures are established through Mini Business Teams and Behavioural Based Safety Teams, but even though these structures exist, employees still experience some barriers to open communication. Resignations are becoming an increasing problem, especially with the shortage of skilled workers. Ireland *et al.* (2006: 14) relate flourishing corporate entrepreneurship with an organisation that has a relatively small number of layers. The key reason for this is that a restricted number of layers results in a broader span of control which in turn creates opportunities for employees to act entrepreneurially.
- Tolerance for risks, mistakes and failure. As manganese alloy production is inherently dangerous, calculated risks are taken from time to time. There is however a rigorous risk assessment process in use and the key word to any experiment, or new task, or idea is: "Have you done the risk assessment, and what mitigating actions have been implemented to keep the risk as low as reasonably practicable (below ALARP)?" Risk taking also refers to possible financial risk as there is no guarantee that a new idea will be successful. Des and Lumpkin (2005: 152) stress that to be successful through corporate entrepreneurship, firms usually have to take on riskier alternatives, even if it means forgoing the methods or products that have worked in the past. Des and Lumpkin (2006: 152) add that successful entrepreneurs are typically not risk takers and they instead, take steps to minimise risks carefully by understanding them.

- Empowered teams / multi-disciplined teamwork and diversity. Functional teams (Mini Business Teams) are empowered through the Business Improvement Process and the Behavioural Based Safety programme. Within their teams they have some freedom in deciding on how the team will be managed – teams can even decide to take disciplinary action against team members that do not comply with the expectations as set out by the pact agreement (team agreement). Cross-functional teams are not commonplace, but some teams do exist for Six Sigma and Lean projects.
- Appropriate rewards and reinforcement. Recognition and rewards with specific reference to innovations and new ideas through the Business Improvement Process, does not exist. During an earlier idea programme, rewards were given and some employees now feel reluctant to generate ideas, because there is no reward for their contributions.

To formalise the implementation of the recommendations the following action plan is suggested:

	<b>Action description</b>	<b>Responsible</b>	<b>Target date</b>
1.	Develop a strategy for entrepreneurship by combining all the current loose standing entrepreneurial activities into one focused strategy.	MEXCO	30/01/2009
2.	Develop a communication and training strategy to roll out the entrepreneurial strategy.	Human Resources & Business Improvement	
3.	Identify entrepreneurial training needs for middle managers.	Human Resources & Business Improvement	30/01/2009
4.	Source a training company that will be able to do the required training and arrange the training.	Human Resources	28/02/2009
5.	Update training and competency matrixes with the relevant information after completion of the training.	Human Resources	30/03/2009 & ongoing

	<b>Action description</b>	<b>Responsible</b>	<b>Target date</b>
6.	Develop a system that will enable middle managers to share their experiences and give training to employees.	Business Improvement	30/03/2009
7.	Further refine current support structures for entrepreneurial activities, including funding for the implementation of viable ideas generated.	MEXCO & Business Improvement	30/03/2009
8.	Evaluate the possibility to reward employees for contributions towards the idea generation process, should the idea be implemented successfully.	Administration & Business Improvement	30/03/2009

#### **5.4 STUDY OBJECTIVES ACHIEVED**

The primary objective of this study, as set out in chapter 1, was to assess corporate entrepreneurship within Metalloys, Meyerton. Various innovation initiatives and programmes have been implemented, with middle managers the key role players in the role out and implementation of these initiatives. The study was to determine whether or not middle managers at Metalloys, Meyerton do perceive the company to have a true entrepreneurial climate. This objective was achieved. An empirical study was conducted at Metalloys, Meyerton, with middle managers as the study population. Completed questionnaires from middle managers were analysed and it was concluded that elements of an entrepreneurial climate do exist at Metalloys, but that middle managers do not perceive the company to have a true entrepreneurial climate.

A further primary objective was to offer recommendations to Metalloys to foster the current climate of innovation to a true entrepreneurial climate. This chapter (Chapter 5) offers recommendations and an action plan to Metalloys, to create a true entrepreneurial climate. This objective was achieved.

Secondary objectives, in support of the primary objective, were to do a literature study on corporate entrepreneurship. This secondary objective was achieved and the detail of the literature study was noted in chapter 2.

Further secondary objectives were to gain insight into the business environment of BHPBilliton and Metalloys, access the perceived entrepreneurial climate within Metalloys and to make conclusions from the empirical study and offer practical recommendations to Metalloys

These objectives were also achieved. Chapter 3 contains notes on the BHPBilliton and Metalloys business environment, while chapter 4 contains the detail of the empirical study and statistical analysis. Chapter 5 concludes with the recommendations.

## **5.5 OPPORTUNITIES FOR FURTHER RESEARCH**

The focus of this study was on the entrepreneurial climate within Metalloys, Meyerton, one company within the Manganese Customer sector within global BHPBilliton. The first recommendation for future research is the corporate entrepreneurship antecedents pertaining to the other companies within the Manganese Customer Sector Group of BHPBilliton, and specifically the other manganese alloy producers within the group.

BHPBilliton goes to great lengths to ensure that corporate strategy and the values of the organisation are implemented and internalized by all companies within the organisation, down to the lowest level. Innovation, giving employees the opportunity to offer ideas for improvement, is one of the focus points within the BHPBilliton strategy. A further recommendation for research, therefore, are the corporate entrepreneurship antecedents pertaining to all the companies within BHPBilliton, and then to compare the level of corporate entrepreneurship of the different companies.

## **5.6 SUMMARY**

BHPBilliton considers itself one of the most successful *global* resources companies and that the company is successful and growing is evident just by looking at the rate at which it has expanded over the past few years and the excellent returns shareholders got on their investments. The top management team at Metalloys, Meyerton, part of the Manganese Customer Sector Group within BHPBilliton,

implemented various initiatives and programmes that support innovation to align themselves with the fundamental requirement “innovation” within the BHPBilliton strategy and to ensure their success in the organisation and the global economy.

From the empirical research done in chapter 4 on the entrepreneurial characteristics and climate it can be concluded that middle managers and superiors at Metalloys, Meyerton, have the ability to act entrepreneurial. The climate survey gave an average entrepreneurial scale score of 2.882 indicating that, overall, subjects are in slight agreement with the statements and suggests that middle managers might perceive Metalloys to have an entrepreneurial climate.

Recommendations to Metalloys include the combination of the current innovation programmes into a formal corporate entrepreneurship strategy. Training of middle managers and employees on various aspects of entrepreneurship should be attended to. A suggested action plan is presented to assist Metalloys to move from merely having programmes that support innovation to a company that foster an entrepreneurial climate.

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# **ANNEXURE A: QUESTIONNAIRE**

**Code number:**

## ***ENTREPRENEURIAL CLIMATE QUESTIONNAIRE***

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**Note:** All responses are confidential and neither the individual nor the organisation will be identified in any report or release.

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# ENTREPRENEURIAL CLIMATE QUESTIONNAIRE

It is generally observed that most innovations come from small companies or individual entrepreneurs. Large organisations, on the other hand, are inherently bureaucratic and there are usually strong opposition to innovative activities in the corporate environment. It is, however, reasonable to expect that in such organisations one would find an abundance of ideas that go unnoticed because there are structural constraints to their realisation, or little or no incentive for employees to bring such ideas forth.

Over the last decade or two, there has been growing interest in corporate entrepreneurship as a vehicle for large organisations to enhance the innovative abilities of their employees and, at the same time, increase corporate success and sustainability. Corporate entrepreneurship (or commonly refer to as intrapreneurship) can be a powerful antidote to large organisation staleness, lack of innovation, stagnated top-line growth, and the inertia that often overtakes the large, mature companies of the world.

South African organisations face major challenges to be sustainable in the future. One way to address these challenges would be for the organisation to upgrade its innovative ability - to become more entrepreneurial in the face of the challenges. To be more entrepreneurial, organisations must tap into the creative power of their employees. Ideas come from people, and innovation is a capability of the many.

**This questionnaire is attempting to measure the entrepreneurial climate in your organisation, in other words, whether the climate in your organisation is conducive for entrepreneurial conduct, innovation and creativity by its employees. Please complete every question / statement to ensure validity and reliability.**

## GENERAL INSTRUCTIONS

Virtually all the questions may be answered by making a cross in the relevant block. Use the following key: **1 = Strongly disagree; 2 = Slightly disagree; 3 = Slightly agree; 4 = Strongly agree.** **You must select the number which best describes how you feel about the item.** For example, should you be asked the extent to which you agree with the statement:

“My manager helps me get my work done by removing obstacles and roadblocks.”

and you feel that you slightly agree, you will mark the number 3 (**3 = Slightly agree**) as in the example:

		Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
A03	My manager helps me get my work done by removing obstacles and roadblocks.	1	2	<input checked="" type="checkbox"/>	4

It is essential you indicate your choice clearly with a pen.

**It is important that you complete all the questions in the relevant sections.**

## SECTION A: ENTREPRENEURIAL CLIMATE

The questionnaire consists of 65 statements. Please indicate to what extent do you agree or disagree with each statement. Mark the applicable block with a cross (X).

		Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
A01	Our leaders take a long-term view of our organisation and articulate their vision to all levels of the organisation.	1	2	3	4
A02	In our organisation, developing ideas for the improvement of the company is encouraged by management.	1	2	3	4
A03	My manager helps me get my work done by removing obstacles and roadblocks.	1	2	3	4
A04	Our organisation has been built up by taking calculated risks at the right time.	1	2	3	4
A05	Our organisation is quick to use improved work methods that are developed by workers.	1	2	3	4
A06	Individuals with successful innovative projects receive additional rewards and compensation for their ideas and efforts beyond the standard reward system.	1	2	3	4
A07	Our organisational vision and strategies are clear to me.	1	2	3	4
A08	An employee with a good idea is often given free time to develop that idea.	1	2	3	4
A09	Project teams in our organisation have considerable freedom to make decisions and act on them without needing to ask for permission.	1	2	3	4
A10	There are several options within the organisation for individuals to get financial support for their innovative projects and ideas.	1	2	3	4
A11	People are keen to share knowledge without regard for crossing departmental or functional boundaries.	1	2	3	4
A12	A great deal of resources are spent in determining customer needs and satisfaction.	1	2	3	4
A13	People are allowed to make decisions without going through elaborate justification and approval procedures.	1	2	3	4
A14	Our leaders challenge the status quo and we are inspired by them to think, reason and act in innovative ways.	1	2	3	4
A15	Top management is aware of and receptive to my ideas and suggestions.	1	2	3	4
A16	Originators of new ideas find it easy to implement because of influential people to support them.	1	2	3	4
A17	Good management of projects involving risk and unpredictability is highly valued, even when things don't always turn out according to plan.	1	2	3	4
A18	There is considerable desire among people in the organisation for generating new ideas.	1	2	3	4
A19	In this organisation rewards and encouragements is emphasised rather than criticism.	1	2	3	4
A20	Our organisation's announced visions and strategies inspire me.	1	2	3	4
A21	People are given considerable opportunity for independence and freedom in how they do their work.	1	2	3	4
A22	We use cross-functional teams or cross-business-unit teams effectively.	1	2	3	4

		Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
<b>A23</b>	Money is often available to get new project ideas off the ground.	1	2	3	4
<b>A24</b>	People are encouraged to talk to employees in other departments of this organisation about ideas for new projects.	1	2	3	4
<b>A25</b>	Product and service innovation are driven by a strong customer orientation.	1	2	3	4
<b>A26</b>	This organisation has a specific value system which we all know and live up to.	1	2	3	4
<b>A27</b>	Our leaders have a good balance between concern for production and concern for people.	1	2	3	4
<b>A28</b>	Those employees who come up with innovative ideas on their own receive management encouragement for their activities.	1	2	3	4
<b>A29</b>	Our organisation has people with influence that support, coach, protect, and find resources for an intrapreneurial project and its team.	1	2	3	4
<b>A30</b>	We have taken some big risks occasionally to keep ahead of the competition in the business we're in.	1	2	3	4
<b>A31</b>	This organisation provides the chance to be creative and try my own methods of doing the job.	1	2	3	4
<b>A32</b>	My supervisor will give me special recognition if my work performance is especially good.	1	2	3	4
<b>A33</b>	Great effort has been made to clarify what the vision and strategy mean to us in our department.	1	2	3	4
<b>A34</b>	I have much autonomy on my job and left on my own to do my own work.	1	2	3	4
<b>A35</b>	Cross-functional team members are left to make decisions without interference from functional Superiors who are not part of the team.	1	2	3	4
<b>A36</b>	Resources are readily available and accessible in pursuance of new ideas and opportunities.	1	2	3	4
<b>A37</b>	Our organisation provides ample opportunities for learning growth.	1	2	3	4
<b>A38</b>	Our organisation involves customers in service and product development.	1	2	3	4
<b>A39</b>	Our organisation has an open communication structure in which all employees participate.	1	2	3	4
<b>A40</b>	Our leaders lead by example and people are eager to voluntarily follow them.	1	2	3	4
<b>A41</b>	This organisation supports many small and experimental projects realising that some will undoubtedly fail.	1	2	3	4
<b>A42</b>	Our organisation's managers have the skills, power, commitment, and courage to be effective sponsors of intrapreneurial initiatives.	1	2	3	4
<b>A43</b>	Experiments are acceptable in the marketplace, not only in the lab.	1	2	3	4
<b>A44</b>	Innovative and new ideas are a regular occurrence in our organisation.	1	2	3	4
<b>A45</b>	In this organisation effective intrapreneurs are generally rewarded.	1	2	3	4
<b>A46</b>	The vision and strategies often help me in setting priorities.	1	2	3	4
<b>A47</b>	I am allowed time at work to safely divert from my assigned tasks to explore new ideas I believe have potential.	1	2	3	4
<b>A48</b>	Project teams have choices in recruiting and selecting new team members.	1	2	3	4
<b>A49</b>	The process for accessing and acquiring resources to pursue new opportunities is streamlined to realise quick approval.	1	2	3	4

		Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
<b>A50</b>	Employees are encouraged to stay abreast of developments in their functional fields and to share their knowledge across functions.	1	2	3	4
<b>A51</b>	We regularly ask our customers what they think of our service and product offerings.	1	2	3	4
<b>A52</b>	The degree of hierarchical control is acceptably low in our organisation.	1	2	3	4
<b>A53</b>	Our leaders seek to maximise value from opportunity without constraint to existing models, structures or resources.	1	2	3	4
<b>A54</b>	Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.	1	2	3	4
<b>A55</b>	In this organisation it is easy to build coalitions of active sponsors to help projects succeed.	1	2	3	4
<b>A56</b>	If you make a mistake in this organisation you will be forgiven.	1	2	3	4
<b>A57</b>	In this organisation people are inspired to push their boundaries and to think "out-of-the-box."	1	2	3	4
<b>A58</b>	In this organisation people are rewarded in relation to the excellence of their job performance.	1	2	3	4
<b>A59</b>	In this organisation management decisions are aligned and supportive to the vision and strategies.	1	2	3	4
<b>A60</b>	I have the freedom to use some of my time to explore new ideas and hunches without having to ask permission.	1	2	3	4
<b>A61</b>	Cross-functional teams are characterised by diversity based on project skills requirements.	1	2	3	4
<b>A62</b>	Attracting resource commitment for entrepreneurial ventures in this organisation is relatively easy.	1	2	3	4
<b>A63</b>	People here spend some of their time and resources helping others outside their area in ways that are not part of their assigned responsibilities.	1	2	3	4
<b>A64</b>	Customers are treated as very important stakeholders and not just another transaction to be processed.	1	2	3	4
<b>A65</b>	In general, people enjoy working for this organisation, are satisfied with their jobs, and do not resign easily.	1	2	3	4

## SECTION B: BACKGROUND INFORMATION

The following information is needed to help with the statistical analysis of the data for comparisons among different interest groups. All your responses will be treated confidentially. Individual responses will not be seen by any one in the business. We appreciate your help in providing this important information.

**Mark the applicable block with a cross (X).**

**Complete the applicable information.**

<b>B01</b>	<b>In which age group do you fall?</b>	$\leq 29$	30 - 39	40 - 49	50 - 59	60+
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<b>B02</b>	<b>Indicate your gender.</b>	Male	Female
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<b>B03</b>	<b>Indicate your management level.</b>	Top management	Middle management	Lower management
Other: (Specify):				

<b>B04</b>	<b>Indicate your highest academic qualification.</b>			
	Lower than matric			
	Matric			
	Certificate			
	Diploma (Technical College or Technicon)			
	University degree			
	Post Graduate degree			

<b>B05</b>	<b>In which industry does the organisation operates?</b>				
	Automotive	Agriculture	Farming	Construction	Food
	Real estate	Retail	Wholesale	Manufacturing	Services
Other: (Specify):					

<b>B05</b>	<b>In which functional department do you work in?</b>				
	Operations	Marketing	Finance	Human resources	Administration
Other: (Specify):					

## SECTION 2

### B. SELF & SUPERIOR-ASSESSMENT

In the left-hand column, evaluate yourself on a scale from 1 to 4 that best represents how well each of the characteristics below applies to you; where 1 shows you are weak in the characteristic and 4 shows you are strong in the characteristic. In the right-hand column, evaluate your superior on a scale from 1 to 4 that best represents how well each of the characteristics below applies to him/her; where 1 shows he/she is weak in the characteristic and 4 shows he/she is strong in the characteristics. Please be honest with yourself. You remain anonymous, and an over-inflation of how you view yourself and/or your superior will compromise the integrity of the survey.

Self-assessment					Superior-assessment			
Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree		Strongly Disagree	Slightly Disagree	Slightly Agree	Strongly Agree
1	2	3	4	Aspiration	1	2	3	4
1	2	3	4	Initiative	1	2	3	4
1	2	3	4	Energy	1	2	3	4
1	2	3	4	Low support needs	1	2	3	4
1	2	3	4	Thriving on ambiguity	1	2	3	4
1	2	3	4	Perseverance	1	2	3	4
1	2	3	4	Responsibility	1	2	3	4
1	2	3	4	Problem solving	1	2	3	4
1	2	3	4	Persuasiveness	1	2	3	4
1	2	3	4	Self-discipline	1	2	3	4
1	2	3	4	Belief in value of money	1	2	3	4
1	2	3	4	Self-confidence	1	2	3	4
1	2	3	4	Balanced ego development	1	2	3	4
1	2	3	4	Market awareness	1	2	3	4
1	2	3	4	Generosity	1	2	3	4
1	2	3	4	Honesty	1	2	3	4
1	2	3	4	Good people judgement	1	2	3	4
1	2	3	4	Patience	1	2	3	4
1	2	3	4	Business knowledge	1	2	3	4
1	2	3	4	Values appropriate control systems	1	2	3	4

**Thank you very much for your valued input.**